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COMMONWEALTH OF PENNSYLVANIA
BOARD OF FISH COMMISSIONERS

Biennial Report

For the Period Ending
May 31, 1932

This Report Has Been Completed to
MAY 31, 1933

Thereby giving you a picture of the pres-
ent day activities of your Commission

HARRISBURG, PENNSYLVANIA

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1930/32



COMMONWEALTH OF PENNSYLVANIA
BOARD OF FISH COMMISSIONERS

O. M. DEIBLER, *Commissioner of Fisheries*
C. R. BULLER, *Deputy Commissioner*

Members—Board of Fish Commissioners

- O. M. Deibler, Chairman.
- John Hamberger, Erie.
- E. W. Nicholson, Philadelphia.
- Kenneth Reid, Connellsville.
- M. A. Riley, Ellwood City.
- Dan. R. Schnabel, Johnstown.
- Leslie W. Seylar, McConnellsburg.
- Roy Smull, Mackeyville.
- H. R. Stackhouse, Secretary to Board.

Superintendents of Hatcheries

- Wayne County Hatchery No. 1—C. R. Buller, Acting Superintendent—Pleasant Mount.
- Erie Hatchery No. 2—P. H. Hartman, Erie, Erie County.
- Corry Hatchery No. 3—A. G. Buller, Corry, Erie County.
- Bellefonte and Spring Creek Hatchery No. 4—T. R. Sorenson, Bellefonte, Centre County.
- Torresdale Hatchery No. 5—J. R. Berkous, Holmesburg, Philadelphia County.
- Union City Hatchery No. 6—F. K. Reidel, Union City, Erie County.
- Reynoldsdale Hatchery No. 7—Guy Wells, Reynoldsdale, Bedford County.
- Tionesta Hatchery No. 8—Bernard Gill, Tionesta, Forest County.
- Huntsdale Hatchery No. 9—T. J. Dingle, Huntsdale, Cumberland County.



OLIVER M. DEIBLER
Commissioner of Fisheries

(Appointed Commissioner of Fisheries January 20, 1931)

"No higher tribute can be given a man than to say he is a good sportsman. Grantland Rice, the Homer of America's sporting world says that 'a good sportsman is one who plays the game according to the rules that govern that game.' "



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LETTER OF TRANSMITTAL

His Excellency Governor Gifford Pinchot,
Harrisburg, Pennsylvania.

Sir:

Conforming to the provisions of Article V, Section 504, of the Administrative Code, we have the honor to present herewith report of the operations of the Board of Fish Commissioners, for the period from June 1, 1930 to May 31, 1932.

So that the report could be made available for meetings attended by the various Commissioners, I have completed the data to May 31, 1933, thereby placing before those who fish in Pennsylvania a complete picture of present day activities.

Your Commission is indeed proud of accomplishments under your leadership. There is probably no one thing which has done more for the streams and waters of the Commonwealth than the survey covering the major waters which is practically completed. We also purchased two new sites for hatcheries and their development has advanced to the point where fish will be distributed this fall.

Respectfully,

BOARD OF FISH COMMISSIONERS

O. M. DEIBLER, Commissioner of Fisheries
JOHN HAMBERGER
E. W. NICHOLSON
KENNETH REID
M. A. RILEY
DAN. R. SCHNABEL
LESLIE SEYLAR
ROY SMULL

IN MEMORIAM

In the passing of Hon. T. H. Harter of Bellefonte, Pennsylvania, conservation has sustained a deep loss. During the ten years he served as member of the Board of Fish Commissioners, Mr. Harter endeared himself to associates on the Board and sportsmen who knew him as one who placed the high needs of conservation above every other consideration. An ardent sportsman, he derived great happiness in fishing and hunting, and had a keen practical knowledge of nature.

At a recent meeting of the Board of Fish Commissioners, the following resolutions were adopted in commemoration of his years of service on the Board:

WHEREAS, It has pleased Almighty God to take from us the soul of our friend and fellow commissioner, Thomas H. Harter; and

WHEREAS, We are filled with deepest grief, and an inconsolable sense of loss by his being thus taken from us, nevertheless, we are not without hope that, while he has been removed for a time from our midst, we have the assurance that he is reaping his reward in some glorious existence beyond the reach of every grief and pain; therefore, be it

RESOLVED, That even though his form will be no longer with us, that his life and his example will live and be an inspiration to each one of us, to give, as he gave, his best efforts to this Commission, to his State, and to his country, and while we shall miss him at our councils for his sincerity and honesty of purpose, we shall endeavor to carry on as he would have helped us had he been spared; and be it further

RESOLVED, That these resolutions be spread upon the minutes of the Board of Fish Commissioners and that a copy thereof duly certified by the members of the Board, be forwarded to the family of Mr. Harter, to the Governor of the State, and to the public press.

O. M. DEIBLER,
Commissioner of Fisheries.

MEMBERS OF THE BOARD

JOHN HAMBERGER	M. A. RILEY
E. W. NICHOLSON	DAN. R. SCHNABEL
KENNETH REID	LESLIE SEYLAR

COMMONWEALTH OF PENNSYLVANIA
Board of Fish Commissioners
Harrisburg, Pa.

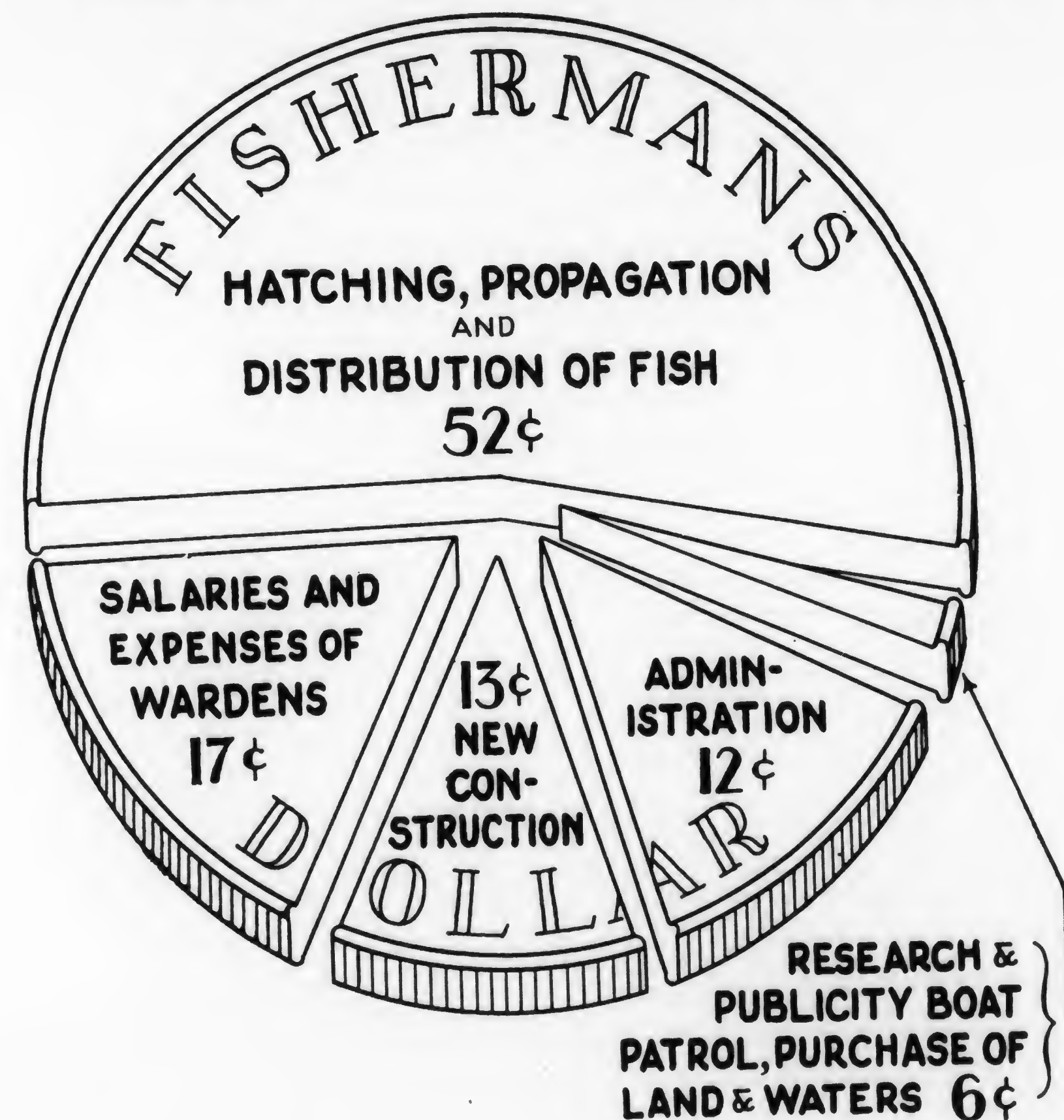
TO ALL FISHERMEN:

As a stockholder in this Commission you are vitally interested in

1. THE FISHERMAN'S DOLLAR AND WHAT BECOMES OF IT.
2. YOUR HATCHERIES—THEIR LOCATION, PRODUCTION, ETC.
3. DISTRIBUTION—STREAMS AND WATERS STOCKED.

Information on these subjects is presented on the following pages. Detailed report of the activities of your Commission will be found commencing on Page 15.

FISHERMAN'S 1932 DOLLAR AND WHAT BECAME OF IT



THE BOARD OF FISH COMMISSIONERS

The Board of Fish Commissioners is an Administrative Board, composed of seven (7) members, and a Commissioner of Fisheries. No direct appropriation from the general fund is received for the operation of any of its functions. It is wholly self-supporting, operating entirely from the fund known as "THE FISH FUND," made possible by the fishermen of the Commonwealth, through the sale of Resident and Non-resident Licenses. In other words, if a citizen of the Commonwealth does not purchase a license to fish, he in no way contributes to the support of the Commission.

Under the present set-up there are no separate Bureaus. Its main functions are:

- Administration
- Hatching
- Propagating
- Distribution
- Protection
- Public Information

A brief description of the various duties involved follows:

ADMINISTRATION

All operations are cleared through its main offices, located at Harrisburg. All questions of importance concerning the Commission as to its various policies, operation of hatcheries, survey of waters, methods of distribution and protection are administered by the Commissioner of Fisheries.

PROTECTION

This branch of service consists of an adequate force to properly patrol the streams and waters—making surveys—enforcement of the laws governing fishing in the inland waters—Delaware River—Lake Erie—enforcement of Motor Boat Law—special investigations—boat patrol service, which covers patrol of Pennsylvania's shore line (forty-eight miles on Lake Erie), Delaware River, Lake Wallenpaupack, Conowingo Dam, Safe Harbor Dam, etc.

HATCHING, PROPAGATING AND DISTRIBUTION

These functions fall under the following headings:—

CONSTRUCTION SERVICE—Construction of new hatcheries—completion of those already under construction—maintenance of all properties under the control of the Board. FIELD SERVICE—Supervision of nine (9) hatcheries—scientific work in connection with different species of fish—experimental work covering the different problems confronting the Board, also those occurring in any of the waters of the Com-

monwealth—egg collection, which supplies eggs to all hatcheries of the Board—consultation work—assisting Associations, Clubs and individuals on fish cultural problems. HATCHING SERVICE—operation of nine (9) hatcheries, three combination warm water and trout hatcheries, three warm water hatcheries, three trout hatcheries. SURVEY SERVICE—Survey of all Streams, lakes and ponds in Commonwealth determining species of fish most suitable and carrying capacity for those particular waters—survey insofar as the aquatic life of all waters is concerned—scientific surveys. DISTRIBUTION SERVICE—Distribution of the output of nine hatcheries—species distributed—brook trout, brown trout, bass, bluegill sunfish, yellow perch, pike perch, catfish, blue pike, cisco, white fish, pickerel, suckers, lake trout, minnows, frogs. All distribution with Board's own equipment and personnel—Limited entirely to approved waters found suitable under the survey.

PUBLIC INFORMATION

Addresses by Commissioner of Fisheries before Fish and Game Associations throughout the Commonwealth, Rotary and Kiwanis Clubs, etc.—preparation of bulletins on fish cultural work, scientific matters, exhibits, etc.—contact with the Public Schools which service includes showing of films on the work of the Board of Fish Commissioners for education of children—publication of Monthly Angler, which is sent to all Associations throughout the Commonwealth—articles for the press.

YOUR HATCHERIES

The accompanying map gives location of all hatcheries in relation to main highway routes.

You as a fisherman, should make it your business to visit at least one hatchery each year. By all means see the new project at Spring Creek which will also be a school for fishermen—Opening date June 1, 1934.

While all fishermen are not motorists, there are thousands who do motor and each year spend a considerable part of their vacation period in the open. We would recommend that at your first opportunity you make it your business to spend several hours at one of the hatcheries—it will prove mighty interesting. You will find courteous employes and by application to the Superintendent, guide will be furnished.

Should this report reach those who are not fishermen, they are missing a great deal in life and we would recommend that with the opening of the next season you purchase a license and give yourself a real vacation along some of the beautiful waters in Pennsylvania. It will be something you have never before experienced and we are sure it will only be the beginning of many joyous days.

The following notice is posted at all Hatcheries:

TO ALL VISITORS

YOU ARE WELCOME BETWEEN THE HOURS OF

7 A. M. and 5 P. M.
(Standard Time)

The following rules and regulations must be observed:

No fishing tackle can be carried on hatchery property.

Machines of all character must be kept on the driveways.

Picking flowers and shrubbery is forbidden.

Paper, remnants of food, or trash of any kind must not be thrown about the grounds or buildings.

There must be no tampering with the water appliances or fish.

PENALTY FOR VIOLATION \$100.

WON'T YOU HELP TO KEEP THE BUILDINGS AND GROUNDS IN GOOD CONDITION?

Strict observance of all rules and regulations is requested, which is no more than any business organization would ask. You want your hatcheries kept in good running condition—we want to keep them that way.

LIST OF HATCHERIES

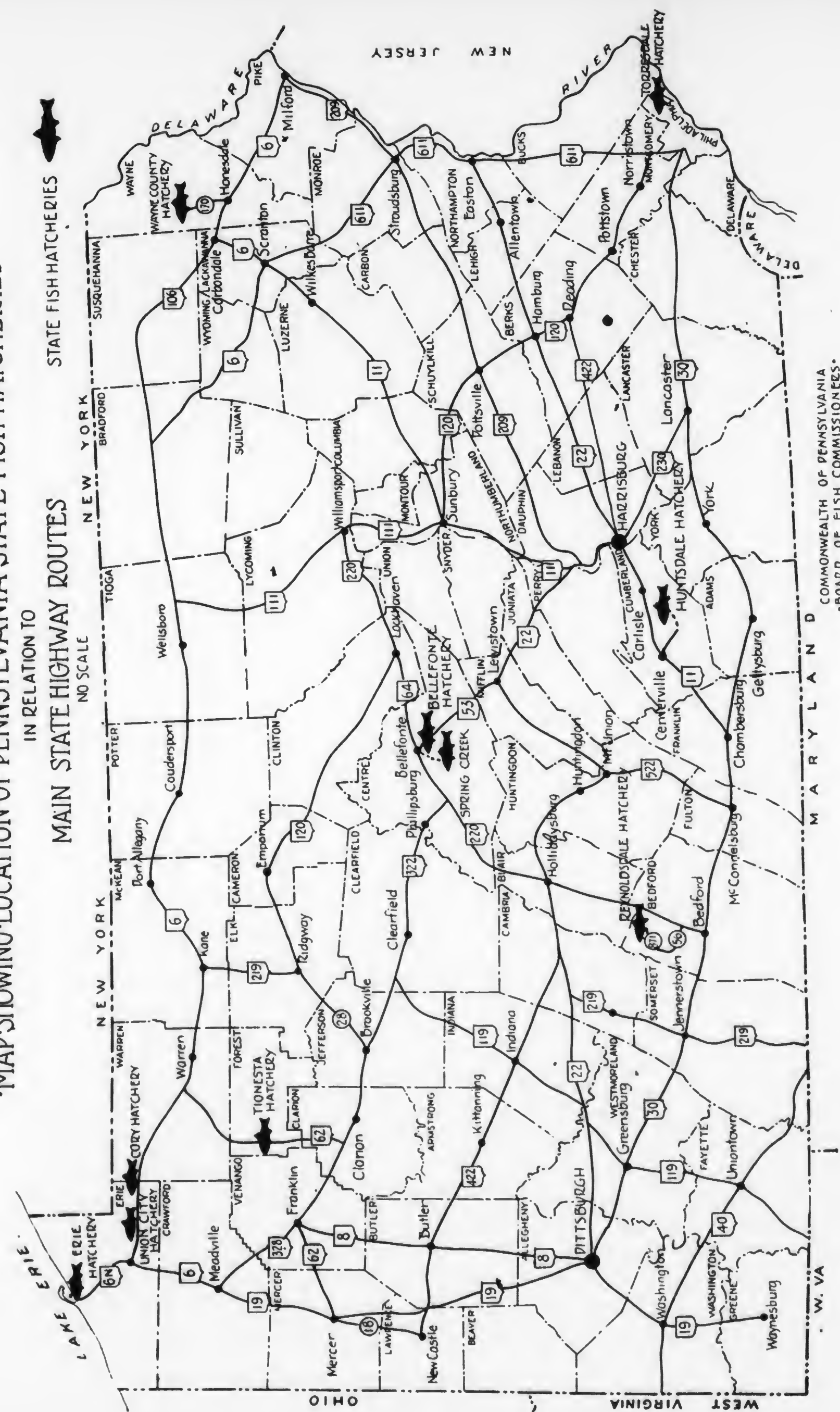
<i>Name of Hatchery</i>	<i>Species of Fish Propagated</i>
Pleasant Mount	Brook Trout—Brown Trout—Black Bass— Pike Perch—Yellow Perch—Sunfish—Frogs —Catfish—Suckers—Minnows.
Torresdale	Pike Perch—Yellow Perch—Catfish—Sunfish —Minnows—Frogs.
Reynoldsdale	Brook Trout and Brown Trout.
Bellefonte and Spring Creek	Brook Trout—Brown Trout—Rainbow.
Tionesta	Brook Trout—Pike Perch—Yellow Perch— Sunfish—Suckers and Catfish.
Union City	Yellow Perch—Pike Perch—Sunfish—Cat- fish—Suckers—Frogs.
Erie	Pike Perch—Blue Pike—Yellow Perch— White Fish—Cisco.
Huntsdale	Brook Trout and Brown Trout.

STOCKING INFORMATION

(Streams and Waters Stocked)

The Board has set up a "Where To Go Fishing Bureau" which we believe will be a real service to the fishermen and for your convenience a twenty page pamphlet giving the major streams and waters stocked with Trout and Bass has been prepared.

MAP SHOWING LOCATION OF PENNSYLVANIA STATE FISH HATCHERIES
IN RELATION TO
MAIN STATE HIGHWAY ROUTES
NO SCALE



Two maps are also supplied with this booklet, showing the towns in various counties in relation to the major Trout and Bass Waters. No attempt has been made to put the fisherman directly on the stream, but the towns listed are good contact points for the major waters in that vicinity.

The Board urges all fishermen to get in touch with their Commission at any time for information on fishing. The names of all waters stocked in your county with the different species of fish will be gladly furnished and if you find the information is not sufficient, a letter to the Board will bring detailed information by return mail.

REPORT OF THE BOARD OF FISH COMMISSIONERS FOR THE BIENNIUM ENDING MAY 31, 1932 AND FOR THE ENSUING FISCAL YEAR ENDING MAY 31, 1933

PENNSYLVANIA is indeed proud of its accomplishments during the period covered by this report. It has been one of real advancement. With its present program and set-up, 1933 should guarantee not only more fish but additional fishing waters. We trust this brief summary of the more important activities will meet with your approval.

ADMINISTRATIVE ORGANIZATION

An Administrative Organization Chart as of June 1, 1933 showing the different functions of the Board of Fish Commissioners is inserted. The major changes during the last biennium show the addition of two new hatcheries or fish farms—at Huntsdale, Cumberland County and Spring Creek, Centre County.

SURVEY OF STREAMS

The First Step Towards Better Fishing is an Intelligent

Survey of All Waters

There is probably no one thing which has done more for the streams and waters in the Commonwealth than the adoption of a new program covering distribution. Under this program all fish are distributed to waters having sufficient flow to carry the fish throughout the entire year.

The drought of 1930 proved beyond doubt that the Board's policy of stocking waters after a careful survey had been made, was the proper one. In this way fish are placed in waters which are suitable, and do not go dry during a severe drought.

All fish are being distributed with the Board's own equipment and personnel, thereby assuring distribution to the waters for which intended. Under the old system of applications, there were probably many instances where fish did not reach the proper waters. The Board's permanent record under this new system gives the particular area where the fish were placed and the names of the persons present.

The same close cooperation and contact will be maintained with Associations—Clubs and individuals in making shipments, as they will be advised wherever possible, so they can have someone present when the fish are distributed.

Upon completion of this survey there will be on file a complete record of all water conditions insofar as fish life is concerned. The number of miles of polluted waters will be shown, the number of miles of posted waters, the approximate number of miles adapted for various kinds of fish, and open for public fishing, the height and location of dams, and other obstructions on streams preventing free migration of fish, extent to which areas are affected by drought, and extent to which areas are being fished, and results obtained. It will also bring a closer relationship between the enforcement officers and the Fish Cultural Branch, and

Under the Classification the following information is being obtained on streams:

Natural Features:

Artificial Features:

Fishing Privileges:

Fish Life:

Stocking Program:

Distribution:

16

[illegible]

COMMONWEALTH PENNSYLVANIA

BOARD OF FISH COMMISSIONERS

SEPTEMBER 1, 1933

BOARD OF COMMISSIONERS
M.A. RILEY • R.L. • L.W. SEYLER
D.R. SCHNAAMBERGER
E.W. NICHOL • K.A. REID

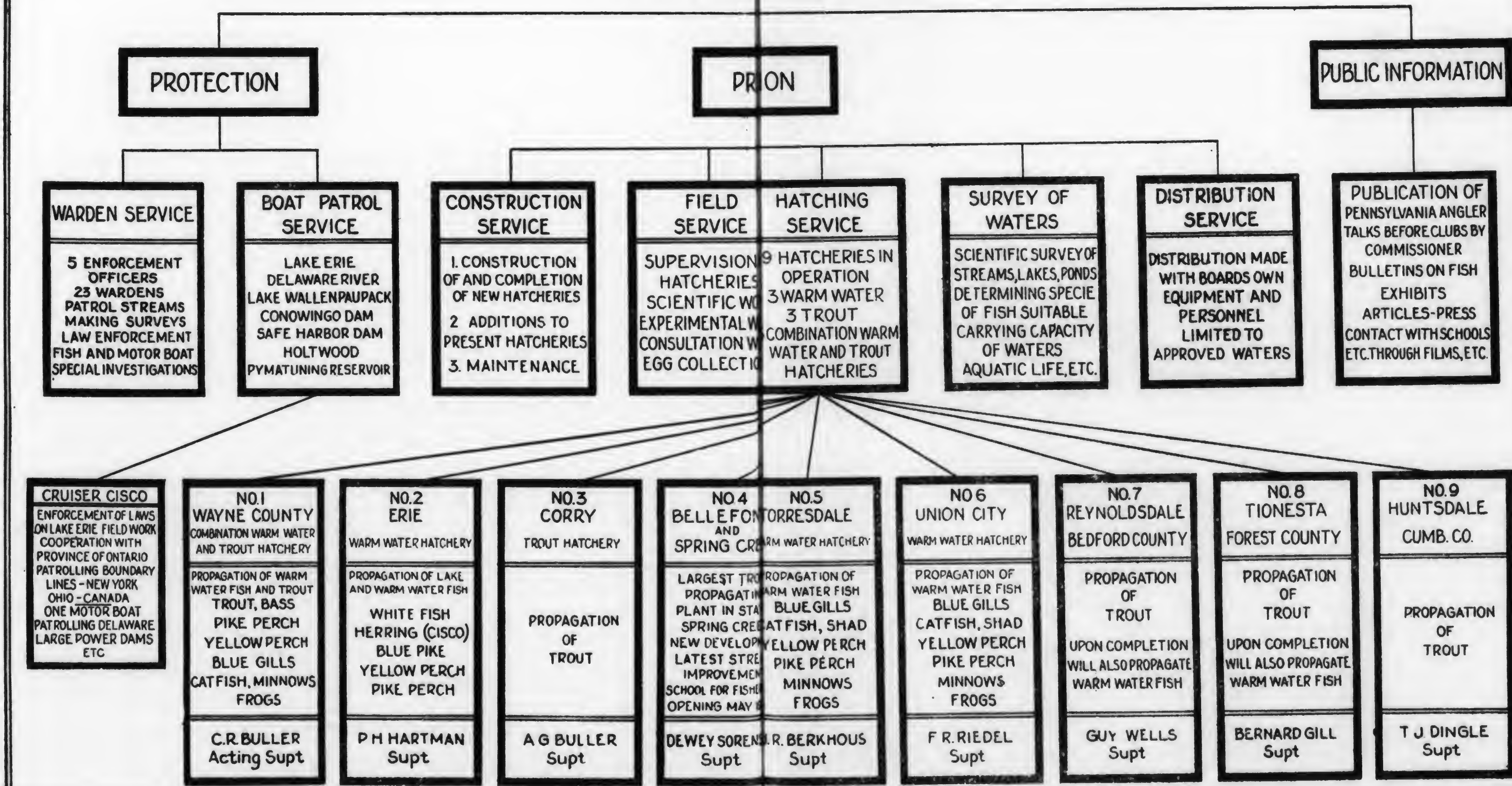
COMMISSIONER FISHERIES
O.C.R.

DEPUTY COMMISSIONER
O.C.R.

SECRETARIAL OFFICES

H.R. STACKHOUSE
Executive Secretary

R.P. DEITER
Accountant
7 CLERKS





HUNTSDALE HATCHERY—Cumberland County

INTENTIONAL 2ND EXPOSURE



HUNTSDALE HATCHERY—Cumberland County

PONDS AND LAKES

Name of pond or lake, county, and approximate area.

Whether or not it is a natural or artificial body and free from pollution.

Species of fish area now contains, and whether or not public can fish by permit.

Whether or not it is open to public fishing.

If posted, name of landowner or club posting land.

Detailed driving directions to lake or pond.

Names and addresses of individuals or Associations who will assist with planting.

Up to the present time the following waters have been surveyed and approved:

TROUT STREAMS—5603 Miles

WARM WATER STREAMS—3796 Miles

WARM WATER LAKES AND PONDS—139,435 acres

The survey also shows:

POSTED STREAMS—782 miles

POSTED PONDS AND LAKES—29,016 acres

POLLUTED STREAMS—4,605 Miles

NUMBER OF BEAVER DAMS LOCATED ON STREAMS—443.

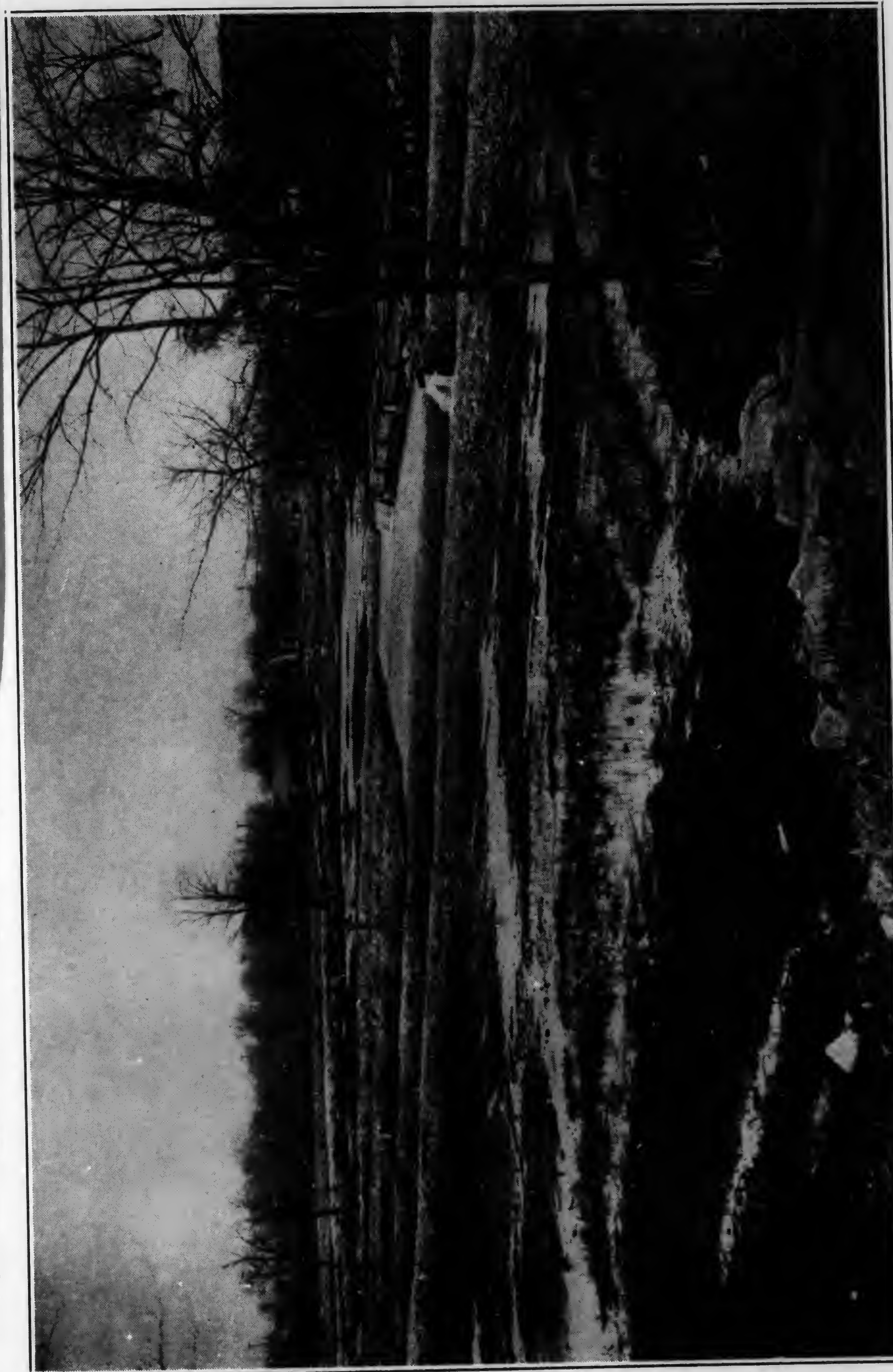
One of the large metropolitan dailies in commenting on Pennsylvania's balanced system of Fish Planting has this to say:

"Now that man has taken over the duty of stocking lakes and streams he realizes that it behooves him to maintain the adjustments which nature formerly provided without his assistance. The Commission has been guided by this knowledge in distributing not only legal-sized trout, black bass, pike, perch, pickerel and ranking game fish, but also bullheads, yellow perch, sunfish and suckers. Minnows are necessary food for other fish and catfish are necessary as scavengers to save the waters from pollution. All these requirements the Pennsylvania experts are carefully meeting. Apparently we have solved the problem of distribution in the economic system of the fish realm better than in our own."

NEW HATCHERIES OR FISH FARMS

Your Commission believes that in securing two new properties for fish propagation, a decided step forward has been made. Their development will be along entirely different lines than those followed in the past.

Believing there were adequate facilities for the hatching of trout, the Board decided upon an entirely new system of construction for trout



HUNTSDALE HATCHERY—Cumberland County

PONDS AND LAKES

Name of pond or lake, county, and approximate area.

Whether or not it is a natural or artificial body and free from pollution.

Species of fish area now contains, and whether or not public can fish by permit.

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HUNTSDALE HATCHERY—Cumberland County

ponds for rearing fish. Arrangements have also been made for improving Spring Creek which traverses the new property in Centre County. This will be developed under the latest approved methods and when completed will be open to the public in general, and will be a school for fishermen. The opening date is set for June 1, 1934, and competent representatives will be present the greater part of the season to give information on stream improvement, fly fishing and subjects pertinent thereto. Permits will probably be issued for the taking of one or two fish on artificial lures.

So you may have a better picture of just what these two properties constitute, we respectfully submit the following:

HUNTSDALE

This property is located in Penn Township, Cumberland County on the headwaters of the Yellow Breeches Creek.

Fortunately it is favorably located insofar as economy of operation and fish distribution is concerned. The water temperatures are ideal for rapid fish growth. Experience thus far has shown that the rate of growth over a given period is approximately fifty percent greater than at the Freestone Hatchery Sites. This rapid growth increased plant production by approximately forty-five percent and produces fish of a given length at less cost than at plants where they must be retained a longer period.

Soil conditions permit economical pond construction as compared to sites where concrete sides and bottoms must be used. The proposed pond construction is wooden sides and natural earth bottoms.

The location of the five springs or sources of water supply permit the construction of three separate hatchery units, thus facilitating the control of fish disease which is of great economic importance as it is not uncommon for epidemics to take heavy tolls where areas cannot be placed under quarantine. Few hatcheries have more than one independent source of water supply—Huntsdale has three.

The stream survey has shown the importance of brown trout in Pennsylvania's waters. The water facilities at Corry, Tionesta and the Pleasant Mount Fish Farms are not suitable for the growing of these species. Additional sites are necessary to take care of this requirement. The Huntsdale location will grow both the brook and brown trout.

This site is being designed for a rearing station as our present plants at Reynoldsdale and Bellefonte have hatching capacities beyond their rearing facilities. This will eliminate the construction of hatchery buildings and the maintenance of additional expensive hatching equipment. When complete, the areas to be covered from this point will be Adams, Berks, Bucks, Chester, Cumberland, Dauphin, Delaware, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Lehigh, Mifflin, Montgomery, Northampton, Perry, York, Philadelphia and Schuylkill Counties. At present this area contains one hundred and twelve approved trout streams. Each stream is stocked approximately three times a year, that is, once in the spring and twice in the fall. At present most of this distribution is coming in about equal numbers from the Pleasant Mount and Reynoldsdale Hatcheries.



BELLEFONTE HATCHERY (Spring Creek Project)

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BELLEFONTE HATCHERY (Spring Creek Project)

SPRING CREEK—CENTRE COUNTY

This property is in Centre County and is what is known as the Bertram tract containing ninety (90) acres and about one mile of Spring Creek. In addition to this, there are several miles of this stream on the penitentiary property, which will no doubt be available to the Board for development. It is intended to make this an ideal fishing stream, to which the public will be admitted under certain rules and regulations. The Board will carry out demonstrations, to which the fishermen will be invited. In fact, you might call it a "Fish Cultural and Stream Improvement College."

During the latter part of December, Edward R. Hewitt, the well known authority on trout, visited this site, and in his report to the Commission, stated that here was a most excellent opportunity for making an ideal fishing stream, better than any he has ever seen. With a string of pools which are being made below the spring for the feeding of trout before they are released, facilities will be available for placing into the stream, wild fish, which will immediately meet the fancy of the fishermen. This is something which has never been accomplished in this country.

This property was purchased for the following reasons:

1. It has an unexcelled water supply.
2. It is geographically located for the distribution of fish.
3. It can be operated as a unit to the present Bellefonte Hatchery, thereby cutting down expenses.
4. It is ideally situated for the Board's Stream Development Program and will be used as a model for all other waters in the Commonwealth.

Located on the property, and independent of the stream, is a spring with a flow of approximately 3,000 gallons of water per minute. After the purchase was completed a survey was made and a proposed plan adopted for the development of the project. The proposed tentative plan calls for four independent units.

1. A series of ponds supplied by spring water.
2. A series of ponds supplied by water from the main stream.
3. Development of the stream.
4. A series of ponds supplied by water from the Spring and Creek.

Advantage was taken of the natural fall, so excavation could be done with the least possible handling of earth and ponds put to use as soon as completed and stream developed with material located on the property.

Work was started in April, 1933.

The first unit to be developed was No. 1, or the spring series consisting of a spring with a flow of approximately 3,000 gallons per minute. It was found this water needed aeration and provisions were made to handle the aeration by gravity. This was accomplished by confining the spring

and raising the head as high as possible without sacrificing the flow of water. This being done, step type aerator was built which cares for the present needs with space and head allowed for the installation of the umbrella type, if it is found necessary, without interfering with any of the permanent ponds. The water from this spring is conducted through an open aqueduct to the head of a series of thirty-two wood-cased gravel bottomed ponds 8 feet wide, 100 feet long, 30 feet deep laid out four abreast, checkerboard fashion, following the contour of the mountain on the west side of the property.

The second unit consists of fifteen earthen bank ponds with concrete bulkheads and intakes varying in size from 2,880 square feet to 14,250 square feet approximately four feet deep planned so that the flow of the water through each pond is controlled independently of the other ponds making them adaptable for the holding of trout or warm water fish. On this unit the concrete has been poured for nine ponds, the excavation of the earth and the planning of the banks is being carried on, so those ponds will be ready for fish in the near future.

The third unit consisting of the development of the main stream to provide cover for fish, requires the installation of deflectors, log and stone dams. At this writing, there has been constructed, two cribbing or Hewitt type dams, two stone dams, three boulder or stepping stone dams, then stone deflectors, one "Y" deflector—constructed of logs—two of stone, three "V" deflectors constructed of stone and various types of cover such as logs, stumps, and brush anchored in the stream. There has also been constructed on this property a stone-cased building, size 26 feet by forty feet, to be used by the Board in conjunction with the stream improvement program. There has also been erected, over the stream, an iron truss-type bridge which provides access to the west side of the property.

The fourth unit consists of nineteen earth bank ponds with concrete bulkheads and intakes, varying in size from 1,200 square feet to 10,500 square feet, approximately three feet deep. The water supply for this unit can be taken from the main creek or from the spring Unit No. 1 independently, or can be operated by a mixture of water from both sources. The flow of water in each pond can also be regulated independently of each other, making this unit adaptable for the holding of trout or warm water fish. The construction on this unit has not been started to date, but will be carried on in 1934.

By acquiring this property, the Board will be able to increase the number of fish propagated in 1933 by approximately 275,000, as some of the ponds on the spring series or Unit No. 1 were completed in time to hold fry from the present Bellefonte Hatchery and additional ponds were completed in time to take care of the fish that had to be removed from the rearing pools at the old hatchery due to an overcrowded condition.

COOPERATIVE NURSERIES

In order to more closely cooperate with the United States Bureau of Fisheries in establishing nurseries, Pennsylvania purchased five hundred thousand (500,000) additional trout eggs. Upon advising of this ar-

rangement, they were deeply grateful to the Board and submitted a list of nurseries, and the number of fish to be supplied. At this writing most of the fish have been delivered.

The majority of these nurseries have been able to distribute a considerable number of trout. There was some question at the time of distribution as to the size and number of fish and in order to overcome this, men were assigned to assist in the distribution. Several nurseries were abandoned on account of insufficient water supply.

DISTRIBUTION

For the first time in its history, the Board distributed more than one million trout of legal size. This is a real accomplishment. The total distribution of all species amounted to 608,383,466, representing a value of \$791,170.68, if purchased from a commercial hatchery.

The following statement of fish distributed January 1, to December 31, 1932:

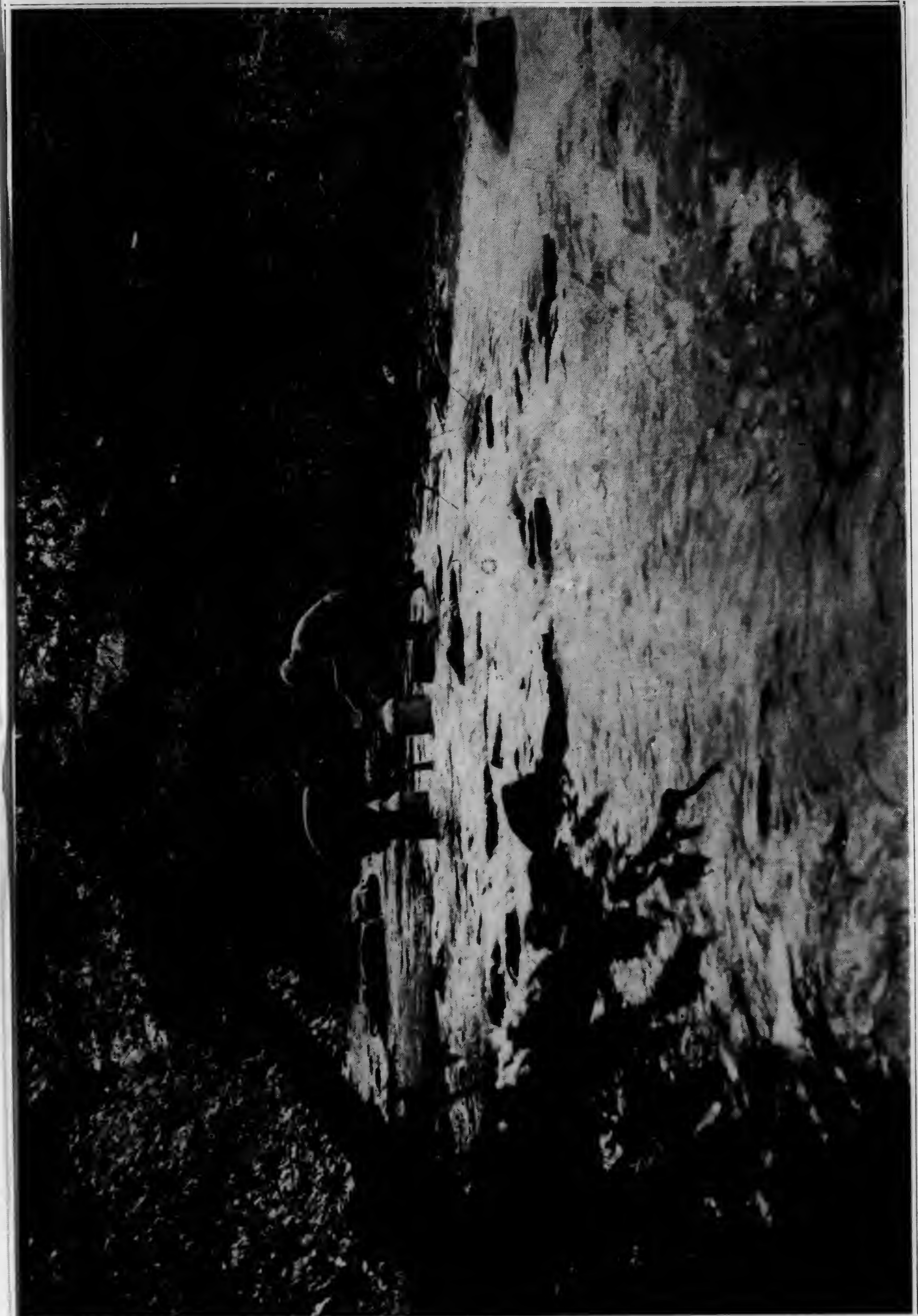
<i>Species</i>	<i>Size</i>	<i>Age</i>	<i>Number</i>
Brook Trout	....6" to 12"	.....17 to 30 months	.... 998,705
Brown Trout	....6" to 12"	.....11 to 30 months	.... 100,036
Black Bass	.....1" to 7"	.....3 mo. to Adult	.... 205,030
Pike Perch	.....Fry	.....Fry	.... 35,754,050
Yellow Perch	....Fry to 10"	.....Fry to Adult	.... 390,774,992
Sunfish	.....1" to 4"	.....4 mo. to Adult	.... 1,912,050
Catfish	.....2" to	.....4 mo. to Adult	.... 406,793
Blue Pike	.....Fry	.....Fry	.... 158,770,000
Cisco	.....Fry	.....Fry	.... 2,500,000
Minnows	.....1" to 4"	.....5 mo. to Adult	.... 996,560
Frogs	.....1" to 4"	.....4 mo. to 12 months	.. 877,700
Pickerel	.....12" to 15"	.....Adult	.... 4,280
Suckers	.....Fry to 12"	.....Fry to Adult	.... 15,028,770
Lake Trout	.....1" to 1½"	.....4 months	.... 54,500
Total			.....608,383,466

FINGERLING TROUT

Arrangements have been made for the purchase of one million additional trout eggs during the fall of 1933 so our spring distribution will have available sufficient fingerling trout for small tributary streams in the various counties where Associations and individuals believe this stocking will be beneficial. It will interfere in no way with the present hatchery set-up and the distribution can be made at a very small cost.

BROWN TROUT

The survey of streams developed the fact that there were thousands of Brown Trout fishermen. Pennsylvania has not propagated Brown Trout for several years but in view of the demand, eggs were secured and over one hundred thousand (100,000) large fish were sent out during 1932.



STOCKING A TROUT STREAM

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STOCKING A TROUT STREAM

As the survey progressed, additional requests were received from all sections of the Commonwealth and it became apparent that it would be necessary to make a reclassification of some streams and add others to the list.

It is hoped the Brown Trout fishermen will be patient in this matter as the propagation of Brown Trout has only recently been put into operation and it takes at least two years before you can get an adequate distribution.

The following well known Brown Trout streams were stocked:

Bedford County:

Raystown Br. of Juniata River
Shobers Creek
Buffalo Creek
Wills Creek

Berks County:

Willow Creek or Clover Creek

Blair County:

Frankstown Br. of Juniata River
Piney Creek Trib. to Frankstown Br. Juniata River.

Cambria County:

Clearfield Creek
Chest Creek

Centre County:

Hosler Dam
Spring Creek
Bald Eagle Creek
Black Moshannon Creek
Penns Creek

Clarion County:

Piney Creek

Clearfield County:

Little Clearfield Creek
Laurel Run
Sugar Camp Run or LaBoard Run

Clinton County:

Big Fishing Creek

Columbia County:

Fishing Creek

Crawford County:

Little Sugar Creek

Cumberland County:

Mountain Creek
Yellow Breeches Creek
LeTort Springs

Elk County:

West Br. of Clarion Creek
Big Mill Creek

Forest County:

West Hickory Creek

Jefferson County:

North Branch of Red Bank Creek

Lackawanna County:

Lehigh River

Luzerne County:

Kitchen Creek
Wapwallopen Creek
Huntingdon Creek
Lehigh River

Lycoming County:

Lycoming Creek
Slate Run or Big Slate Run
Larry's Creek

McKean County:

East Branch of Tionesta Creek

Monroe County:

Brodheads Creek
Seventeen Mile Creek
Lehigh River

Northampton County:

Bushkill Creek

Pike County:

Wallenpaupack Cr. or S. Br. of Wallenpaupack Creek
East Br. of Wallenpaupack Creek
Raymondskill Creek
Lackawaxen River.

Potter County:

Allegheny River
Oswayo Creek
Mill Creek

Somerset County:

Laurel Hill Creek
Wills Creek

Sullivan County:

Loyalsock Creek
Lt. Loyalsock Creek

Susquehanna County:

Starrucca Creek

Tioga County:

Pine Creek

Union County:

White Deer Creek
Penns Creek

Venango County:

Little Scrubgrass Creek
Pithole Creek

Warren County:

Jackson Run
Brown Run
Cadwell Creek
West Br. of Cadwell Creek
Tionesta Creek
East Br. of Tionesta Creek
West Hickory Creek.

Wayne County:

Seventeen Mile Creek
Wallenpaupack Creek
Lt. Equinunk Cr. or Braman Cr.
West Br. of Wallenpaupack Creek.

Westmoreland County:

Tub Mill Run

INCREASED FISHING WATERS

Streams:

Through the efforts of the Board, many additional waters are being made available to the public. Through closer cooperation with the land owner and industry, many miles of water have been opened to the fishermen, which includes twenty-five (25) miles of excellent trout streams located in Susquehanna, Clinton and Wayne Counties.

At the time this report was being compiled, word had been received that many additional miles of water would be available through the Pocono Section.

We are of the opinion that if the sportsmen in different sections of the Commonwealth would appoint committees from among their members to interview owners of posted land, much good would come from their efforts. We have found where fishermen assured the land owner of protection, he met them halfway.

Associations and individuals have increased fishable waters by having appropriate signs put up showing there was a close cooperation between the land owner and the fisherman.

Those interested in posters of this kind can communicate with the Board of Fish Commissioners at Harrisburg, Pennsylvania.



LAKE CLARKE—Safe Harbor, Susquehanna River

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Pine Creek

Union County:

White Deer Creek
Penns Creek

Venango County:

Little Scrubgrass Creek
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LAKE CLARKE—Safe Harbor, Susquehanna River

Lakes:

The Safe Harbor Dam on the Susquehanna has been completed. This covers approximately ten and one-half square miles, and is being stocked with Yellow Perch, Pike Perch, Suckers, Minnows, Bass, Sunfish and Catfish. The Power Company contributes four thousand (4,000) Dollars each year for the purchase of additional fish.

Lake Kuhn which is the property of the Evitt's Creek Water Company, Bedford County, has been completed. This is approximately two and one-half miles in length and will furnish excellent fishing. It is located just above Lake Gordon, which, for many years, has been furnishing the bass fishing for southwestern Pennsylvania.

The Pymatuning Reservoir is almost completed. This will cover approximately 16,730 acres and is located in both Pennsylvania and Ohio. Will be open to the public for fishing.

Mr. George S. Beal, Engineer of Dams, Water and Power Resources Board, Department of Forests and Waters has this to say:

"Few persons in central and eastern Pennsylvania realize that there is being constructed in the northwestern part of the State a lake that will be the largest body of water in the Commonwealth. The Water and Power Resources Board of the Department of Forests and Waters is building the Pymatuning Reservoir on the headwaters of the Shenango River in Crawford County, about 40 miles south of Lake Erie.

"The word Pymatuning is of Delaware Indian origin, meaning "the crooked mouthed man's dwelling place." This new lake is shaped like a huge letter "J," upside down, as one usually looks at the map, with the top of the letter at the dam which forms the lake, about 1½ miles northwest of Jamestown, Mercer County, and the bottom of the letter at Linesville, Crawford County.

"The Pymatuning Swamp, the source of the Shenango River, covers an area of over 10,000 acres and has been the subject of considerable discussion and legislation since 1868 when a resolution was passed by the General Assembly providing for a survey and estimate of cost of reclaiming the swamp. Similar legislation was enacted in 1907, but when hearings were held before the Water Supply Commission, protests were made against draining it on the ground that the swamp was a valuable storage area.

"The Legislature of 1911 appropriated \$10,000 to determine the feasibility of the reservoir project. Other Legislatures, beginning with that of 1913, made appropriations for the project, but with such conditions attached that no money was spent except for investigations, preparation of plans and the appraisal of property, until 1921 when the first land was purchased. The construction of the dam was commenced in 1931.

"The Pymatuning Reservoir when full will cover 16,730 acres or about 26 square miles, about one-fourth of which will be in the State of Ohio. It will be about 18 miles long, measured along the middle, will have a shore line of about 70 miles, a maximum width of 2.2 miles and an average width of about 1½ miles. The maximum depth of water will be 35 feet, and the capacity of the lake will be 64,275,000,000 gallons.



HOLTWOOD—Susquehanna River

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"This lake will cover nearly three times the area of the Wallenpaupack Lake in Pike and Wayne Counties, about 18 times the area of Conneaut Lake, the largest natural lake in Pennsylvania, and 3,000 acres more than Chautauqua Lake in New York.

"The main purpose of the lake is to regulate the flow of the Shenango and Beaver Rivers, providing an adequate supply of water during dry seasons for domestic and industrial uses, improving sanitary conditions, and controlling and reducing the heights of floods. In the Shenango Valley at Sharon, Farrell, New Castle and other places are large steel mills and industrial plants requiring large quantities of water for efficient operation.

"During dry seasons the water is used over and over again, and its temperature sometimes reaches 140 degrees Fahrenheit. This past summer the water was so low at Sharon that even by reusing it there was not enough for operating purposes and the steel mills were considering closing down when the small amount of water that could be stored in the Pymatuning Reservoir was released and proved sufficient to tide over the critical period. Such water shortages can never occur again, and with the ever present threat of such shortage removed there should be greater industrial expansion in this valley.

"The dam which creates this new lake is a rolled earth embankment 2,400 feet long and 50 feet in maximum height, requiring for its construction 370,000 cubic yards of earth. The water face of the dam is protected from erosion by heavy stone riprap, and there is a masonry lined waterway around one end to take care of flood discharges.

"The ordinary discharge of the lake will be through two reinforced concrete tubes, each 6 feet by 8 feet, passing through a gate or control house, where two sluice gates in each tube will control the flow of water, and then under the embankment to the old river channel.

"Twenty-five miles of highways will be submerged, and two routes with a total of about five miles will be relocated, and about two miles of railroad track will be relocated and raised.

"One of these routes is that between Espyville, Pennsylvania, and Andover, Ohio, an important east and west highway. The main fill for this road is 2½ miles long, with a maximum height of 32 feet, and has required over 700,000 cubic yards of earth to construct it. The sides of this fill are protected from erosion by stone paving two feet thick. There are two bridges in this fill; one with an underclearance of 20 feet to allow the passage of boats from one part of the lake to another. The other highway which is being rebuilt is the one leading south from Linesville. It is also necessary to raise the Pennsylvania Railroad track at this point, and the new highway and railroad are being placed side by side on a new fill about two miles long, requiring over 300,000 cubic yards of earth. Two railroad crossings on this highway are abolished by the new work.

"This fill is being built as a dam, and that part of the reservoir to the east of it, about 2,700 acres in area, will be maintained at an elevation two feet higher than the main reservoir. The Pymatuning Swamp has long been known as a paradise for birds and other forms of wild life, and it



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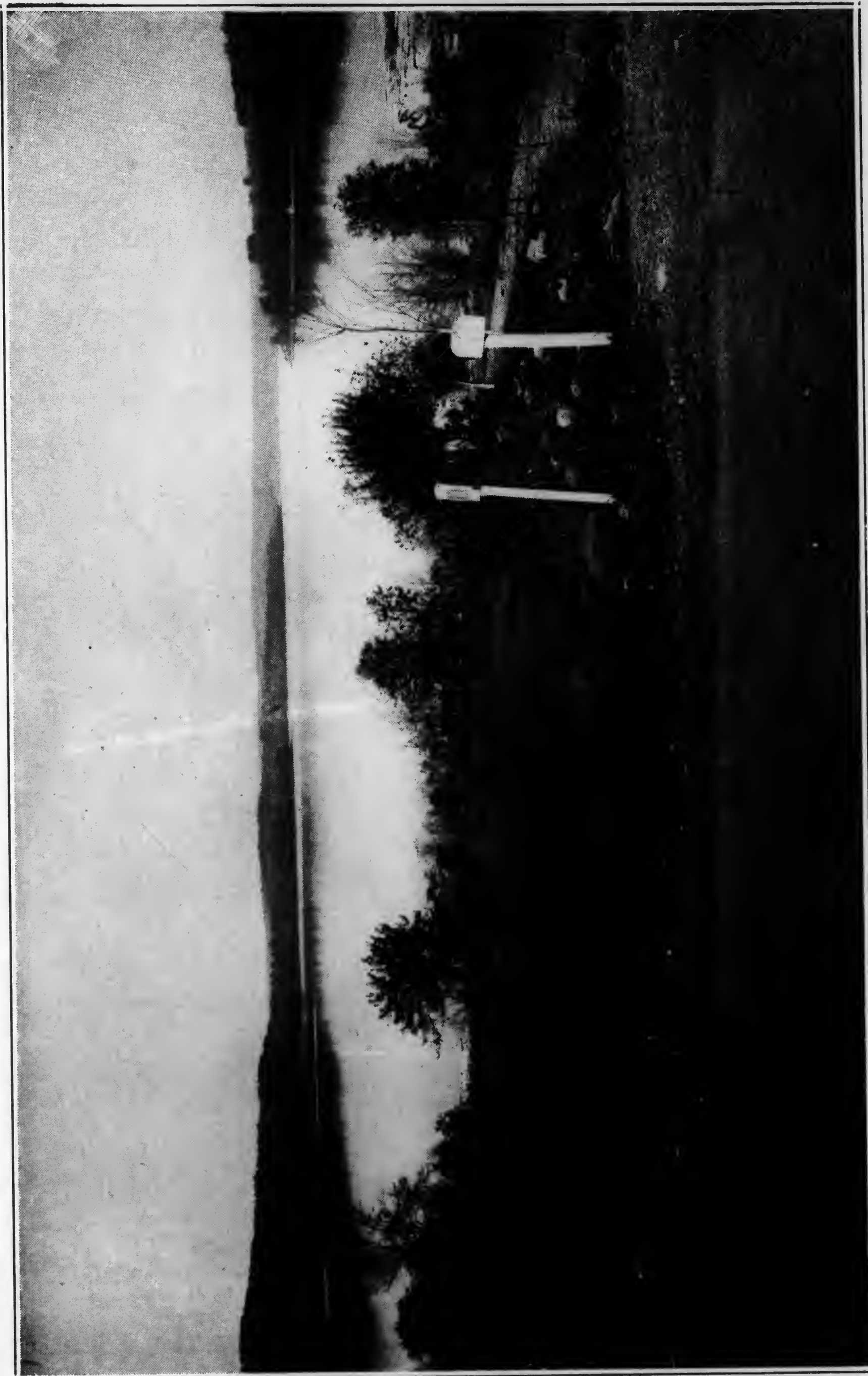
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LAKE WALLENPAUPACK

is expected that this part of the reservoir and the adjoining land will be set aside as a migratory bird refuge or a sanctuary for all forms of wild life. A portion of this area will be left in its present wild state without any clearing of any kind.

"An area of over 20,000 acres has been purchased in Pennsylvania for this project, and over 5,000 acres in Ohio, the latter portion by private interests, principally steel companies of the Shenango Valley. The Ohio land was all bought before any property was acquired in Pennsylvania.

"Usually it was necessary to buy entire farms in order to secure the land to be flooded, and as a result the State now owns about 8,000 acres in addition to the area to be flooded. This area can be turned into a State Park, or used for forestry, recreational, or other purposes.

"The Water and Power Resources Board is developing a plan for the recreational use of this area, and it is probable that certain sections will be set aside for public recreation, while others will be leased for cottage or camp sites. The lake will be stocked with fish.

"The entire flooded area has been cleared of all trees, brush, fences, and buildings. The work was done by the Board so as to afford relief to the unemployed. Camps were established at three sites and men from the counties in and adjacent to the Shenango and Beaver Valleys were registered under the general direction of a representative of the Department of Labor and Industry. The clearing continued over a period of about one year and a half, and at one time about 1,000 men were engaged in this work.

"The total cost of the project has been about \$3,500,000, including the cost of the land purchased in Ohio by private subscription at the cost of \$400,000.

"In closing I will quote Governor Pinchot's words in connection with the Ground Breaking Ceremonies October 6, 1931:

"The Pymatuning Dam has been started and will be completed during my administration. That is a source of deepest gratification to me. It is a great plan for true water conservation and beneficial use. Its value is confined to no one purpose, and its influence for good will be felt throughout Western Pennsylvania and Eastern Ohio. I am proud of it."

COMPLETION OF HATCHERIES

During the period covered by this report, the following work was done at the hatcheries now in operation:

Pleasant Mount Hatchery

Converting Pond No. 36 into ten small concrete ponds.

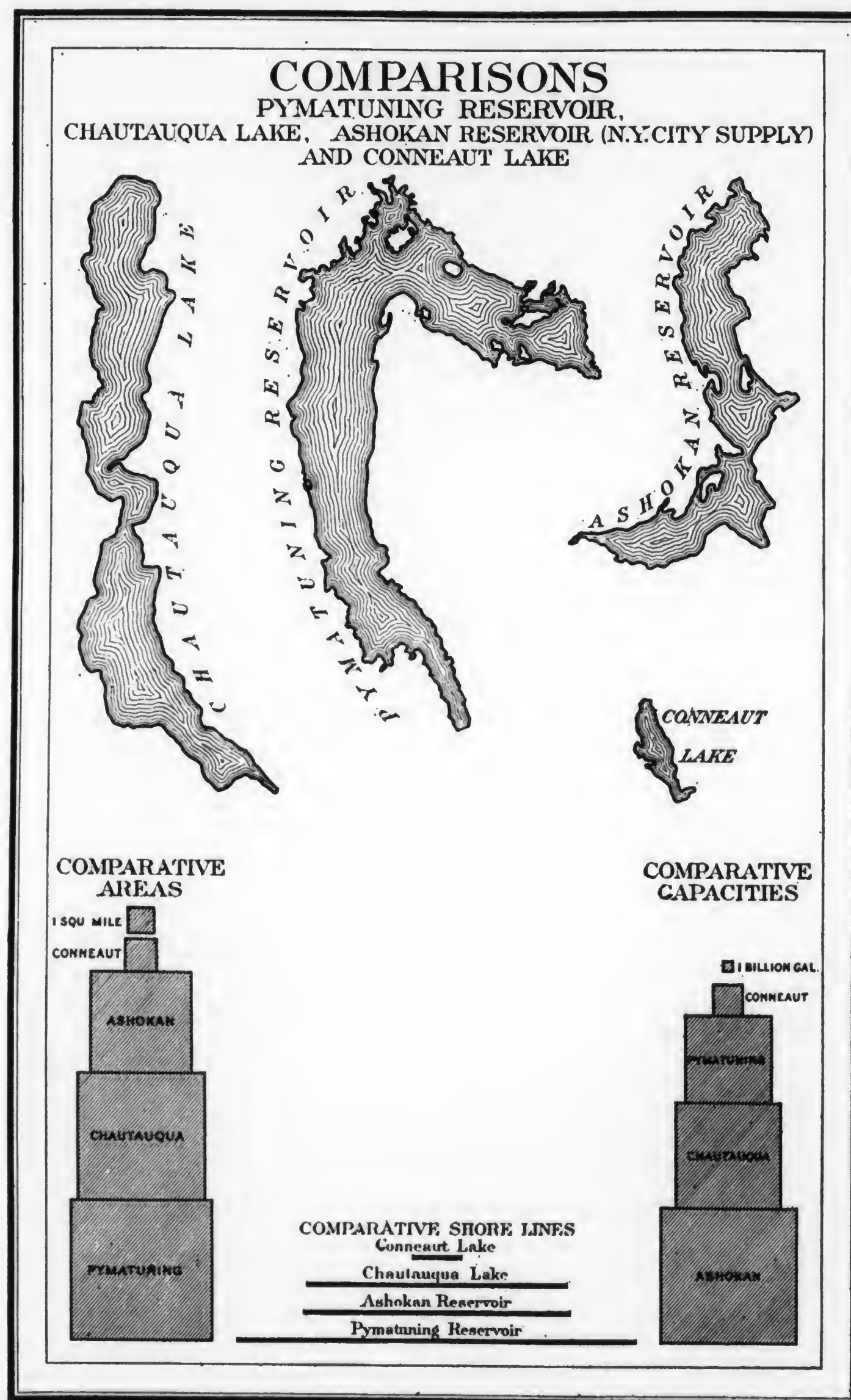
Building concrete aqueduct for concrete ponds north of Hatchery Building No. 1.

Laying pipe line from Spring No. 1 to Hatchery Building No. 1.

Laying pipe line from well No. 2 to Hatchery Building No. 1 and No. 2.

Building conversion dam in creek north of meat house.

Installing of refrigeration plant.



Construction of additional daphnia ponds.

Construction of additional earthen ponds at Unit No. 3.

Union City Hatchery

New Battery section and fry tanks were installed to increase the hatching capacity for pike perch and yellow perch.

Tionesta Hatchery

This hatchery is still under construction. During this period:

A series of warm water ponds were built on the flat south of the hatching house.

Two large warm water ponds north of the hatchery building were constructed.

Construction of eight trout ponds paralleling the creek channel

Four flats south of the building graded and seeded.

Fish display room created for the exhibition of fish.

Reynoldsdale Hatchery

Construction of the garage and meat house.

Sixteen large rearing pools were created on the flats below the concrete nursery ponds.

Area around spring and hatchery building graded and seeded.

Fish display room for exhibition of fish created.

Corry Hatchery

Holding capacity increased by construction of four additional ponds on lower section of property.

Pump installed to deliver water from the lower spring to the upper pond series which increases output.

Bellefonte Hatchery

Aeration system, which placed hatchery on full production basis completed.

Two new concrete ponds built paralleling meat house.

BUREAU OF RESEARCH

Fish Forage:

This Bureau has continued studies on artificial daphnia culture as fish food, particularly for the bass, sunfish, and catfish. The need for daphnia at Pennsylvania hatcheries has been proven, and the culture of these organisms is no longer an experiment.

At the Pleasant Mount Hatchery, the number of daphnia beds has been increased to one hundred and ten. Union City Hatchery has thirty-two. During the season for growing these organisms, which extends from June until October, the Pleasant Mount Unit produced an average of thirty-two quarts daily—Union City, ten quarts. During the height of the season, a production of sixty-four quarts a day was reached. In order to have daphnia available when needed and to insure an uninterrupted supply, while it is being fed to the fish, constitutes a very difficult and technical task. While the results obtained in this work has been very gratifying, there still are a number of difficulties which remain to be solved.

Fish Disease:

Little has been accomplished in disease control, as the time has been taken up on stream survey work. The hatcheries have operated without any serious epidemics. A number of reports were received and investigations made of diseases in wild waters. The outbreak of disease among wild fish has in most cases been attributed to the lowering of their resistance because of the drought for the past two years.

EDUCATION

A real campaign of education has been in progress. Your Commissioner attended between 250 and 300 meetings, travelling over 40,000 miles contacting the various Fish Associations and individuals throughout the Commonwealth.

The outstanding accomplishment was the publication in December, 1931 of the *Pennsylvania Angler*. This bulletin has placed the Fish Commission in a position where it can get over to the fishermen, the story of what is really being done. Many fine compliments have been received and the feature articles previously appearing in the Biennial Report of the Board are now published in the *Angler*. The subscription charge is fifty cents a year, however, it is mailed free of charge to

All Associations
Editors of Newspapers
Regional Directors of Boy Scout Troops
Officials of State and National Government

The following motion pictures are available:

Parade of Pennsylvania Fish
Battling Black Bass

Fish displays were completed at Tionesta and Reynoldsdale Hatcheries and with those already installed at Pleasant Mount and Erie, the public has available in different sections of the Commonwealth, live displays of our native fishes. Registration shows that thousands of people from all sections of the Commonwealth are viewing them. The following groups have made special trips by bus, etc.:

Boy Scout Troops
Classes from various Colleges

The University of Pittsburgh maintains a laboratory on Presque Isle and have done much scientific work which is available for the Board.

TRAINING SCHOOL FOR OFFICERS

The inauguration of a Training School for enforcement Officers and Wardens has been of great benefit to the personnel of the Board. The Fish Commission never had sufficient funds or the facilities for the establishment of a school of this kind but had realized that if its officers were to be at all efficient, insofar as their service to the fishermen were concerned, it would be necessary in some way, to provide a course of training which would embody the things which go toward making a better officer.

In 1932 the Game Commission extended to the Board of Fish Commissioners, an invitation to use what is known as "Marshall Lodge" with all its equipment for use as a Training School. This is the school used by the Game Commission for the past several years. An immediate acceptance was made and the first school was held during the month of July and arrangements were made for a similar course in 1933. A great improvement was shown in the efficiency of officers during the months following instruction and it has given them a physical and moral development which will better fit them in their respective communities to command a more wholesome respect for observance of the laws, and above all has taught them their serious responsibilities and obligations to the fishermen of the Commonwealth.

FEDERAL BLACK BASS LAW

There was approved on July 2, 1930, an Act to regulate the interstate transportation of Black Bass, which made it unlawful for any person to deliver or knowingly receive for transportation, or knowingly to transport, by any means whatsoever, from any State, Territory, or the District of Columbia, to or through any other State, Territory, or the District of Columbia, or to or through any foreign country, any large mouth black bass (*Micropterus Salmoides*) or any small-mouthed black bass (*Micropterus dolomieu*), if (1) such transportation is contrary to the law of the State, Territory, or the District of Columbia from which such black bass is to be transported, or (2) such black bass has been either caught, killed, taken, sold, purchased, possessed, or transported, at any time, contrary to the law of the State, Territory, or the District of Columbia in which it was caught, killed, taken, sold, purchased, or possessed, or from which it was transported; and no person shall knowingly purchase or receive any such black bass which has been transported in violation of the provisions of this Act; nor shall any person receiving any shipment of black bass transported in interstate commerce make any false record or render a false account of the contents of such shipment.

Pennsylvania's Fish Commission immediately notified all officers of its enactment with instructions to lend every effort towards prohibiting the sale of any black bass in this State. It took considerable time and effort on the part of the Board to educate those operating Fish Markets that we meant business. One of the serious drawbacks to enforcement was—Maryland allowed bass to be shipped from different sections, however,

just recently they enacted a law prohibiting the sale of bass in the Baltimore area.

We know this information will be of much interest to the bass fishermen.

The United States Commissioner of Fisheries has notified the Board they have made considerable headway in the enforcement of the Federal Black Bass Law in cooperation with various states during the past two years. Numerous cases have been investigated and evidence turned over to the State authorities resulting in convictions and prosecutions in State Court, and a number of shipments of black bass transported in violation of the Federal Law have been seized and confiscated. In addition, at the suggestion and with the assistance of the United States authorities, many States have recently improved their State laws protecting black bass and a large percentage of those engaged in the sale have voluntarily obeyed the law when the provisions have been explained.

The States of Alabama, Arkansas, North Dakota, Oregon and West Virginia had nothing on their statute books of any importance insofar as bass were concerned, but at the last session of their Legislature they passed legislation which not only protected the bass within their own State, but prohibited their sale, thereby prohibiting the shipment of bass from any of these States.

In the States of Delaware, Rhode Island, Tennessee, North Carolina and South Carolina, legislation was introduced, but nothing definite has as yet been done.

In the States of Maryland, Indiana, Missouri, New Mexico, Kansas and South Dakota, favorable legislation was either defeated, or action deferred.

MOTOR BOATS

Under date of May 28, 1931, the Governor approved an Act, providing for a license to operate motor boats on any of the inland waters of the Commonwealth. The enforcement of this law was placed in the Fish Commission which made it necessary to issue instructions to all Officers that in addition to their other duties they would have to patrol the waters in their area and see that motor boats had the necessary license. Many complications arose during the first year the license was in operation and it was found many defects existed in the bill which would have to be adjusted at the next session of the Legislature. As far as the Fish Commission is concerned, it does not approve of the operation of motor boats on the majority of our inland waters for the reason it is a great detriment to the fish and aquatic life and in addition interferes greatly with the average fishermen.

Many speed boats were purchased as soon as the season started and they were being operated, not only at great speed, endangering the fishermen but the public in general.

The first year several accidents occurred, some of which proved fatal. It was also found on small areas, great damage was being done by the

wash from these boats, cutting out the banks and destroying retaining walls. It appeared the only way this could be avoided would be to prepare a special set of rules and regulations prohibiting operation of motor boats at a speed greater than eight miles per hour on certain areas.

The rules and regulations provide, "No motor boat on any stream, lake, pond or other water of the Commonwealth shall be operated at a greater speed than eight (8) miles per hour within one hundred (100) feet of shore—or within one hundred (100) feet of a buoyed fishing ground, channel or bathing beach. This regulation will be rigidly enforced."

During this year, a considerable improvement has been shown and the Board believes that by 1934, regulations will be in force which will protect all persons.

A schedule of the number of licenses issued in 1932 and the principle waters on which licenses were granted is given below:

Total Number of Licenses issued	2,271
Total Revenue received	\$5,196

Types Licensed

Outboard	1,895
Inboard	376

Waters on which used

Conneaut Lake	134
Lake Wallenpaupack	138
Safe Harbor Dam	27
Conowingo Dam	20
Holtwood Dam	4
Other Lakes	426
Other Waters	1,522

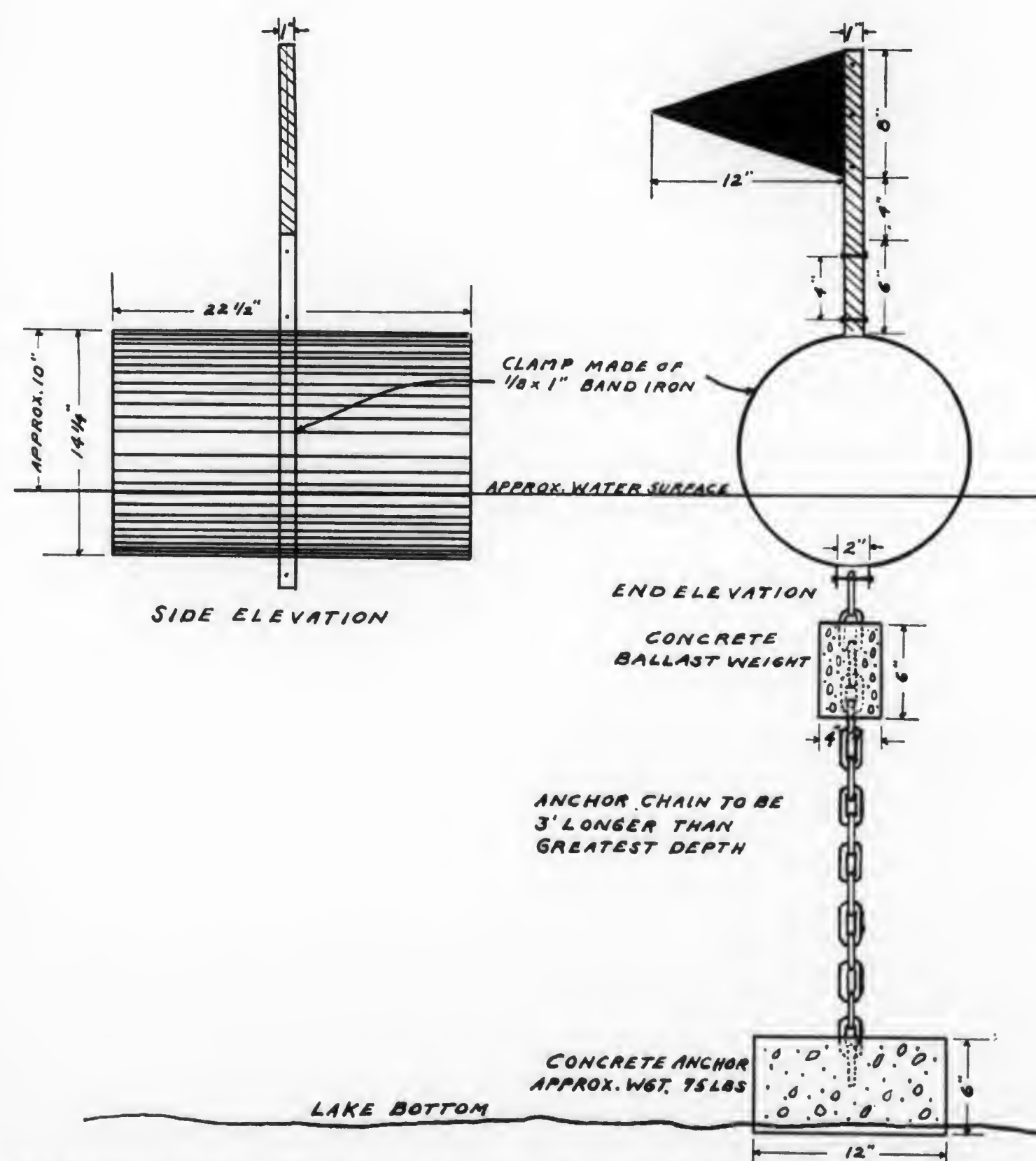
Lanes For Motor Boat Travel and Buoys:

From time to time the Board will set up special rules and regulations covering the operation of motor boats on different lakes and streams: that is, lanes or channels will be set up inside of which motor boats will not be permitted. In other lakes, buoys will be placed and all motor boats will have to keep within the prescribed area.

Where it is found necessary to place buoys, in any of the waters of the Commonwealth, the Board suggests that all buoys be painted white, stand vertically approximately eighteen (18) inches above the water, and that their construction be of a type satisfactory to the Board of Fish Commissioners. Buoys should be constructed of wood, shaped something like an elongated fishing tackle "bobber," attached either by a chain or wire to a concrete or metal sinker. This type of buoy is inexpensive and probably has a maximum diameter at the middle of six (6) or seven (7) inches. At the top of the buoy we would suggest that a red flag of some durable material be attached. The buoy itself would be about four (4) feet in length.

BOARD OF FISH COMMISSIONERS SUGGESTED TYPE OF BUOY

WHERE IT IS FOUND NECESSARY TO BUOY DANGEROUS ROCKS
FISHING BARS OR GROUNDS-CHANNELS-BATHING BEACHES ETC.
THE FOLLOWING INEXPENSIVE TYPE OF BUOY IS SUGGESTED



TO BE FABRICATED FROM A 1/4 OR 100 LB NON RETURNABLE GREASE
OR OIL DRUM - OBTAINABLE AT GARAGES + SERVICE STATIONS - FLAG
+ ANCHOR CHAIN ARE ATTACHED TO DRUM BY CLAMP MADE OF TWO
PIECES OF 1/8 x 1 x 29" BAND IRON - SPACED AT TOP TO RECEIVE A 1 x 1"
WOOD FLAG STAFF AT THE BOTTOM APPROX. 2" SO CLAMP CAN BE DRAWN
TIGHT - DRUM THOROUGHLY CLEANED + CALKED TIGHT - PAINTED WHITE
USE 1/4" MACHINE BOLTS - FLAG MADE OF 8 OZ. DUCK PAINTED RED.

Cedar blocks about two (2) feet long, painted white, could also be used for buoys. In many places, these blocks are being made from old telephone poles.

(Upon request, cut showing these buoys will be furnished).

The Board has experimented with several types of buoys and the one shown on the accompanying cut has proven the most satisfactory. It is inexpensive to construct and the drums can be secured from garages, service stations, etc., at little or no cost.

LEGISLATION

The following legislation was enacted at the 1931 Session:

Act prohibiting purchase, sale and exposing for sale of black bass, whether caught within or without this Commonwealth. This will prohibit, for all times, the sale of any black bass in Pennsylvania.

Act according to U. S. Bureau of Fisheries the right to conduct a fish hatching and fish cultural station in Pennsylvania. Two sites were purchased—one of 250 acres in Clinton County near Lamar, the other sixty acres in Centre County, six miles distant.

Act making it unnecessary to secure permits for construction of dams not exceeding three feet in height, or fifty feet in width. Such dam or dams to be for the sole purpose of creating pools for fishing.

Act licensing motor boats. The administration was placed in the hands of the Board of Fish Commissioners. Became effective July 1, 1931.

The following legislation was enacted at the 1933 Session:

Act reducing the number of trout which can be taken in any one day from twenty-five (25) to twenty (20).

Act permitting eel chutes from August 1st to November 30th, inclusive, from 4 P. M. to 8 A. M., Sundays, excepted, in

North Branch of the Susquehanna below northern boundary of Berwick;

West Branch of the Susquehanna below the bridge at Northumberland-Lycoming County line;

Juniata River below Mount Union;

Delaware River below Easton.

License fee, in addition to fishing license, one Dollar (\$1.00).

Act Making changes in the Motor Boat Law.

There was also introduced at this Session of the Legislature, a Bill with amendments to the Fish Code which were of much importance to the Fish Commission. The Bill was passed by the House with little or no difficulty but when it arrived in the Senate, there were so many amendments proposed, the Board recommended, if it was returned to the House

for concurrence, it be killed. This was done during the closing days of the session and the Associations and individuals throughout the Commonwealth received circulars giving detailed information.

FISHING INDUSTRY ON LAKE ERIE

Statistics for the last few years, indicate the great need for concerted action by the commercial fishermen towards a betterment of fishing conditions out of the Port of Erie. The Board of Fish Commissioners has had many conferences with the view of securing concurrent legislation with the various States and Dominion of Canada which would tend to increase fish production but unfortunately, it has been difficult to make the commercial fishermen see this, however, it is now entirely up to them and unless something is done toward preserving the industry, it will only be a matter of a few years until there will be little or no fishing.

Insofar as the various States and the Dominion of Canada are concerned, conferences were held in 1932 and 1933 and an agreement drawn up under date of February 28, 1933, which will mean much to future fishing providing the commercial fishermen give it their whole-hearted support.

The uniform regulations under this agreement are as follows:

1. No gillnet shall be more than 36 meshes deep, effective upon enactment by all states and the Province represented by contracting parties.
2. There shall be a closed season from December 11th to the last day of February, both dates inclusive, during which period commercial fishing of all types shall be suspended.
3. No gillnet with mesh less than $4\frac{3}{4}$ inches shall be employed for the taking of whitefish and lake trout, effective January 1, 1934.
4. The use of any gillnet with meshes between $3\frac{1}{8}$ inches and $4\frac{3}{4}$ inches shall be illegal, effective January 1, 1934.
5. There shall be a closed season for sturgeon during the period, January 1, 1934 to December 31, 1938, both dates inclusive.

The last Biennial Report contained an article covering the reprint from the Proceedings of the Pennsylvania Academy of Science on the Phytoplankton and Pollution in Presque Isle Bay. Since then, another interesting bulletin has been put out on the Limnological Studies at Lake Erie, and is made a part of this report.

Dr. O. E. Jennings has this to say in reference to the study:

"Most of the investigations of the microscopic plant and animal life of the Great Lakes have been carried on only during the warmer part of the year, but, it is obviously very desirable to know what are the conditions during all twelve months of the year.

The studies of the microscopic plant life (phytoplankton) of Presque Isle Bay and of adjacent Lake Erie which were carried on from early in

1929 to June, 1931, and which are operated on by Dr. Gottschall in the accompanying paper have a highly important connection with fisheries problems in these waters. It had for some time been recognized that the facilities offered at the Fish Hatchery were unusually favorable for continuous year-round studies of the plant life of Lake Erie because of free access to the raw Lake water which was being rapidly drawn in from the City water-supply intake, one mile out from the north shore of Presque Isle and at a depth of 25 feet below the surface, and three and one-half miles out from the main shore. Stations also established in Presque Isle Bay afforded a basis for a comparison of the life of the open lake and that of the protected bay, and because of the protection of the encircling peninsula of Presque Isle, it was possible to more frequently and more safely visit these stations than would have been possible had they been in the open lake.

The fundamental reason for such studies as these lies in the fact that animals directly or indirectly rely on plants for their food. Even though fish may eat such things as lake-fly larvae or daphnia, the food, directly or indirectly, was originally plant life. Some insects blow in from the land but the fishing in Lake Erie depends ultimately almost entirely on the microscopic aquatic plant life. In the marshes and shallow waters of Presque Isle Bay and in the Lagoons of Presque Isle, there are Pondweeds and other larger aquatic leafy plants which furnish shelter and food for smaller animal forms which are potential fish food. In the open lake, however, most of the potential fish food is organized by the microscopic plant life, consisting of diatoms and the green and blue algae.

These microscopic plants depend, in turn, upon certain suitable temperatures, certain amounts of carbon-dioxide and oxygen in the water, certain degrees of acidity or alkalinity of the water, and the amount of light. Water absorbs more gas, such as oxygen or carbon-dioxide, when cold than when warm. The necessary light supply may be influenced by the roiliness or turbidity of the water itself, or by ice of varying thickness or transparency. It must be recognized that man's activities are bringing about conditions radically different than those that formerly prevailed. The clearing away of the forests and the open cultivation of the soil on the mainland nearby certainly contributes in no small degree to the roiliness or turbidity of the water and so interferes with the supply of light necessary for the microscopic plants. Mud and various other kinds of refuse finding its way into the bay may settle upon the leaves of the larger aquatic plants and may interfere with the light supply, both for them and for the microscopic plants, and it may bring about chemical changes or pollutions of a disturbing nature. Artificial conditions due to man's contaminating activities were shown by Dr. Gottschall's studies to be a factor in the distribution and amount of microscopic plant life in different parts of Presque Isle Bay. Nowhere in the bay was the water free from sewage contamination, but on the far side, away from the city, and more particularly towards the west end of the bay, there was the least pollution.

From the standpoint of the food supply available directly or indirectly for fish, Dr. Gottschall's charts are extremely interesting. To the writer, one of the unexpected things brought out was the variation in the time

of the greatest abundance of some of the forms. The heaviest crop of diatoms, for instance, occurred in the fall of 1929 and the spring of 1931. Diatoms are much more important in amount than are the other algae, and they are found in the smallest numbers in late summer and in February and March. The total crop of plants during the summer of 1930 was about twice that of the summer of 1929. If sufficient studies of this sort were available it would seem reasonable to suppose that a correlation would be found between lean diatom years and poor fishing. These lean diatom years might be the more important the younger the fish, as the smaller fish would be the more directly dependent on microscopic plants for food. It might, further, seem possible that an estimate might be formed of the probable food supply available and the upper limits of fish planting or of fish production. It will be noted, further, that different kinds of diatoms and other algae were found by Dr. Gottschall to have normally different seasonal periods of abundance. These various kinds may perhaps also have different food values as potential fish food. Altogether, Dr. Gottschall found that the total crop of plant material present represented an enormous quantity, there being no time, either in the bay or the lake when the amount was less than 25,000 of the microscopic plants per gallon. In September, 1930, we roughly estimated that the floating plant forms in the surface three feet of water of Presque Isle Bay if collected into one mass would form a cube about eighteen feet each dimension.

As contributing to a knowledge of potential fish-foods in Lake Erie throughout the whole year, Dr. Gottschall's studies have been highly important. Such studies should be continued, especially since the situation at Erie is so exceptionally favorable for such investigations.

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LIMNOLOGICAL STUDIES AT ERIE, PA.

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INTRODUCTION

In 1902, Snow published a report on the plankton algae of Lake Erie. Her work which was entirely qualitative was only in the western part of Lake Erie. During the summers of 1928 and 1929 a thorough limnological investigation of Lake Erie was made under the auspices of the United States Bureau of Fisheries, the New York Conservation Department, the Ontario Department of Game and Fisheries, the Health Department of the City of Buffalo, and the Buffalo Society of Natural Sciences in order to determine the cause of the decline in fish life. Thinking that a year-round survey of the phytoplankton and the chemical and physical conditions of the waters in the vicinity of Erie, Pennsylvania, would be of interest this work was started in 1929 and completed in June, 1931.

The aim has been to obtain as many data as possible in order to increase our knowledge of biological conditions in Lake Erie and more particularly Presque Isle Bay. Zooplankton studies were made by another worker. So many data have been obtained that only a summary of the work can be given here. All of these data can be obtained in a thesis deposited in the University of Pittsburgh library.

Through the courtesy of Mr. P. H. Hartman a temporary laboratory was set up in the State Fish Hatchery at Erie where practically all of the analyses were made.

LOCATION

Presque Isle Bay lies north of the City of Erie. (Fig. 1) Along the south shore the land slopes down to the waters edge where the wharves are located. To the northwest is Presque Isle peninsula which is covered with tall trees. On the east the harbor entrance or channel and a narrow breakwater are located. Except for this channel there is no opening into the Lake. The shores slope gently down under the water in every part of the Bay except where it has been dredged to admit large boats, i. e., from the channel to the wharves. The depth here is between 19 and 24 feet. Sewers from the City enter the Bay along the south shore discharging the sewage entirely on the surface. The approximate depth at various parts of the Bay may be obtained from Figure 1 which was adapted from the 1903 chart of Erie Harbor and Presque Isle, U. S. War Department Survey of the Northern and Northwestern Lakes.

METHODS

Temperature determinations were made bi-weekly during the summer months and semi-weekly during the winter. A common laboratory thermometer inserted in a liter bottle as described by Kemmerer, Bovard and Boorman (1923) was used. The thermometer was compared with a thermometer standardized by the U. S. Bureau of Standards and the necessary corrections made.

Collections for chemical analyses were secured frequently throughout the two year period. In the chemical and also the bacteriological studies Standard Methods of Water Analysis was used. The greatest number of samples was taken from the Lake. (Fig. 1) This is the intake for the water supply of the City of Erie. The inlet from the Lake into the intake pipe is three and one-fourth miles from the Fish Hatchery, one mile from the north shore of Presque Isle, and 25 feet below the surface. This raw water for study was obtained in the Fish Hatchery and, since this was the only place where Lake samples were taken, reference to the Lake will indicate this point of collection. For the stations in the Bay three spars showing the position of the intake pipe for the City water

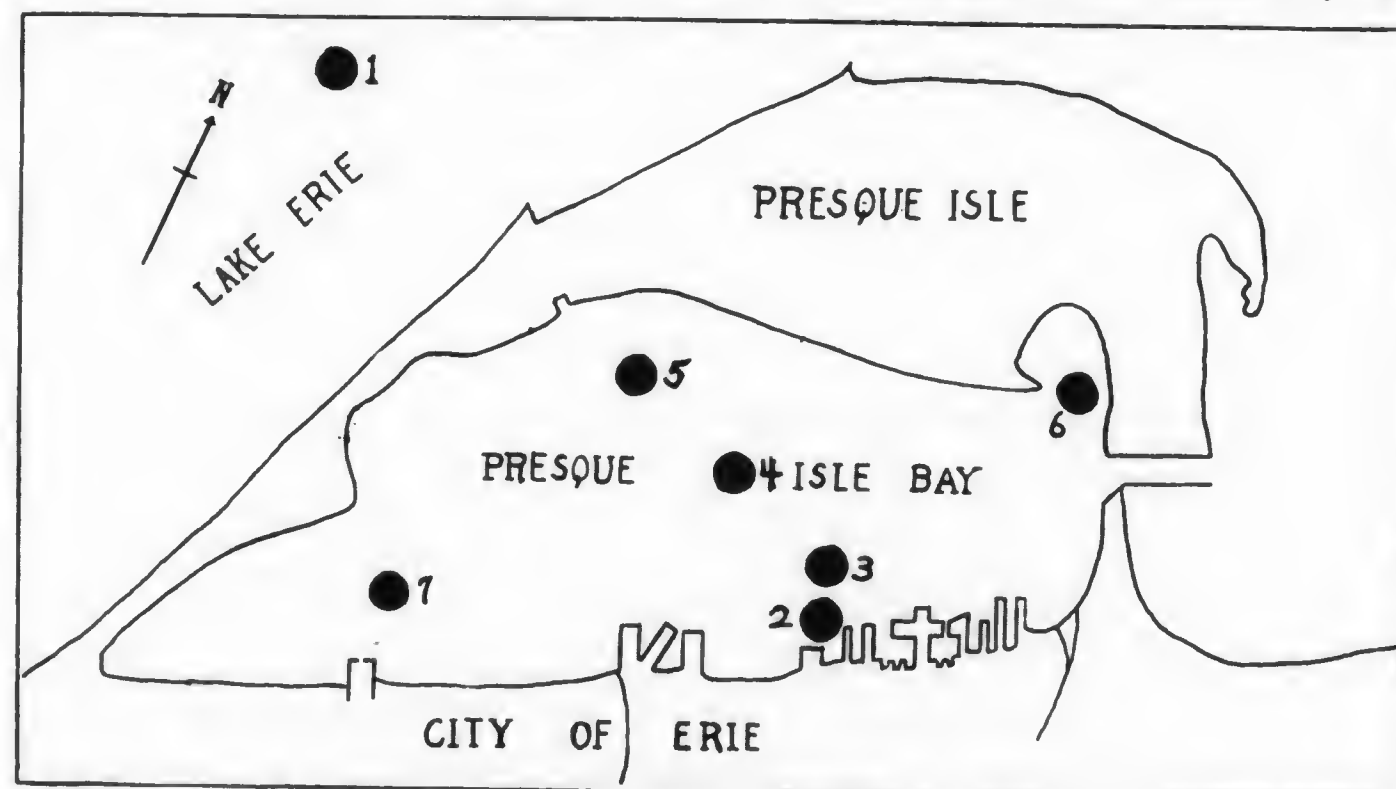


Fig. 1. Location of Presque Isle Bay and the Plankton Stations.

supply were selected. The various depths are shown in Figure 1. One station at the western end of the Bay and one at the mouth of Misery Bay were chosen and marked by a buoy. One station was also located at the Fish Hatchery pier.

Samples for the quantitative analysis of the lake water were taken semi-weekly. For the Bay, weekly collections were made during the months of June, July, August and September of 1929 and 1930 while during the winter they were taken bi-weekly. Surface and bottom collections were always obtained. At the central station, which is the deepest part of the Bay, samples were also taken at six foot intervals. For collection, a Myer's water bottle or a pump connected to a $\frac{5}{8}$ inch rubber hose was utilized. One-half to one liter was obtained. Five hundred cc. were then concentrated using the Sedgwick Rafter method. Twenty random counts were made on 1 cc. of the concentrate in a counting cell. The error involved was found to be 25% for algae and 1% for diatoms.

A small net described by Juday (1916) was used as a means of comparison with the method described above. Twenty liters of water were pumped and concentrated. The method used gave results 2.1 times higher than the net method, using *Tabellaria*, *Fragilaria* and *Dinobryon* as a basis for comparison. The average number of phytoplankton per liter was found for a fourteen day period and expressed by the graphical method utilized by Birge and Juday (1922). Time is plotted along the abscissa and quantity along the ordinate.

PHYSICAL AND CHEMICAL STUDIES

The highest temperature in the Lake was 22 degrees, which was recorded on August 3, 1930. The lowest temperature, 1.0 degrees Centigrade, was found during the entire month of February, 1931. The temperature of the bottom of the Bay varied only slightly from that of the Lake. The surface water was seldom more than one degree higher or lower than the bottom and during the two years of study no instance of permanent stratification was observed.

DISSOLVED OXYGEN, CARBON DIOXIDE, AND pH

During the course of the investigation several hundred analyses showed that in the Lake the percentage of saturation was usually between 65 and 80, except during the spring and fall when the water was most dense, and complete saturation was often observed. In Presque Isle Bay practically the same results were obtained except that the percentage was not as high, due, probably, to the constant decomposition of a greater amount of organic material. The lowest quantity was 50% of saturation on September 12, 1929. The highest, 126%, was recorded on August 9, 1930, in Misery Bay, the bottom of which is covered with *Potamogeton*.

During the spring, summer and fall months the free carbon dioxide content of the Lake was about 1 ppm. In the Bay the content was greater than in the Lake although it never exceeded 5 ppm. The fixed carbon dioxide averaged 21 cc. per liter.

The pH generally varied with the free carbon dioxide content. The lowest recorded pH was 7.6 and the highest, 8.4.

BACTERIA

A series of bacterial analyses showed the bacterial content of the water in the Lake to be that of a normal unpolluted lake. The number seldom exceeded 75 per cc. The open water of the Bay contained many more bacteria averaging 2,000 per cc. Toward the west the water was purer than the southern shore where the Erie sewers enter. Nowhere was the Bay free from sewage contamination.

THE PHYTOPLANKTON

Lake

The most abundant group of Phytoplankton in the Lake was the diatoms (Fig. 2) which occurred in two peaks of abundance, one in the

spring and one in the fall. The time of occurrence was not always found to be the same, nor was the crop equally heavy at each peak. The heaviest crops were produced in the fall of 1929 and in the spring of 1931. During the spring of 1930 the peaks of abundance of the dominant genera of diatoms occurred in the following succession, *Stephanodiscus* in April, *Melosira* and *Tabellaria* at the end of May, *Asterionella* in June, and finally *Fragilaria* in July. The dominant species of diatoms were *Asterionella formosa*, *Fragilaria virescens*, *Stephanodiscus niagara*, and *Tabellaria fenestrata*.

The Chlorophyceae and Myxophyceae were not as abundant as would be expected from the results of other workers. This was probably due to the depth from which the water was drawn together with the breakage due to being drawn through three and one-half miles of pipe. Although the crop was found to be small the number still gives some indication of the relative amount from season to season. The Chlorophyceae were present in greater numbers in the summer, with *Scenedesmus quadricauda* and *Oocystis elliptica* dominant; while the Myxophyceae predominated in the fall with *Anabaena flos-aquae*, *Microcystis flos-quae*, *Clathrocystis aeruginosa* and an unidentified species of *Chroococcus* most prominent.

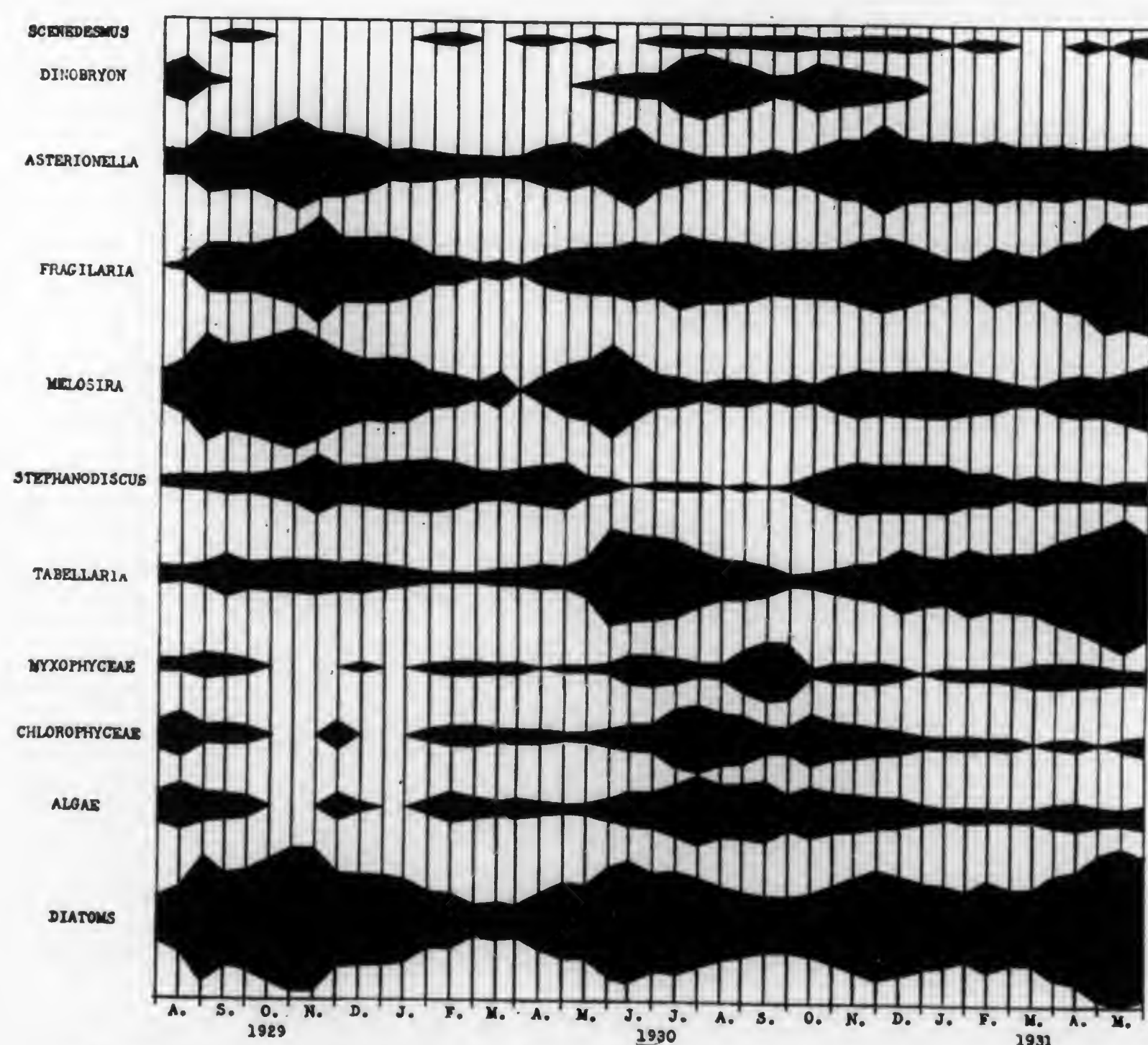


Fig. 2. Seasonal distribution of the Phytoplankton in the Lake from 1929 to 1931.

The Peridineae were never very abundant. *Ceratium* and *Peridinium* were the only representatives. The Chrysomonadineae were represented by *Dinobryon* of which *Dinobryon divergens* was the predominant species.

Presque Isle Bay

Figure 3 shows the seasonal variation of the dominant genera of the phytoplankton during the summer of 1929. Here again the main group of phytoplankton was the diatoms which increased in amount toward fall with *Fragilaria* and *Melosira* as dominant genera. The Myxophyceae and Chlorophyceae were more abundant during the summer than during the autumn. The dominant species of the genera plotted were, *Anabaena flos-aquae*, *Clathrocystis aeruginosa*, *Oocystis borgei*, *Scenedesmus quadricauda*, *Sphaerocystis Schroeteri*, *Dinobryon divergens*, *Asterionella formosa*, *Fragilaria virescens*, *Stephanodiscus niagara*, and *Tabellaria fenestrata*. A bloom composed of *Anabaena flos-aquae*, *Microcystis flos-aquae*, and *Clathrocystis aeruginosa* occurred during the early fall.

The abundance charts of the crop of phytoplankton in the Bay during the summer of 1930 are found in Figure 4. During this summer some very interesting results were obtained. On comparing the crop during the summer of 1930 with that of 1929 these very noticeable facts are observed; 1, a crop of phytoplankton more than twice as great as the pre-

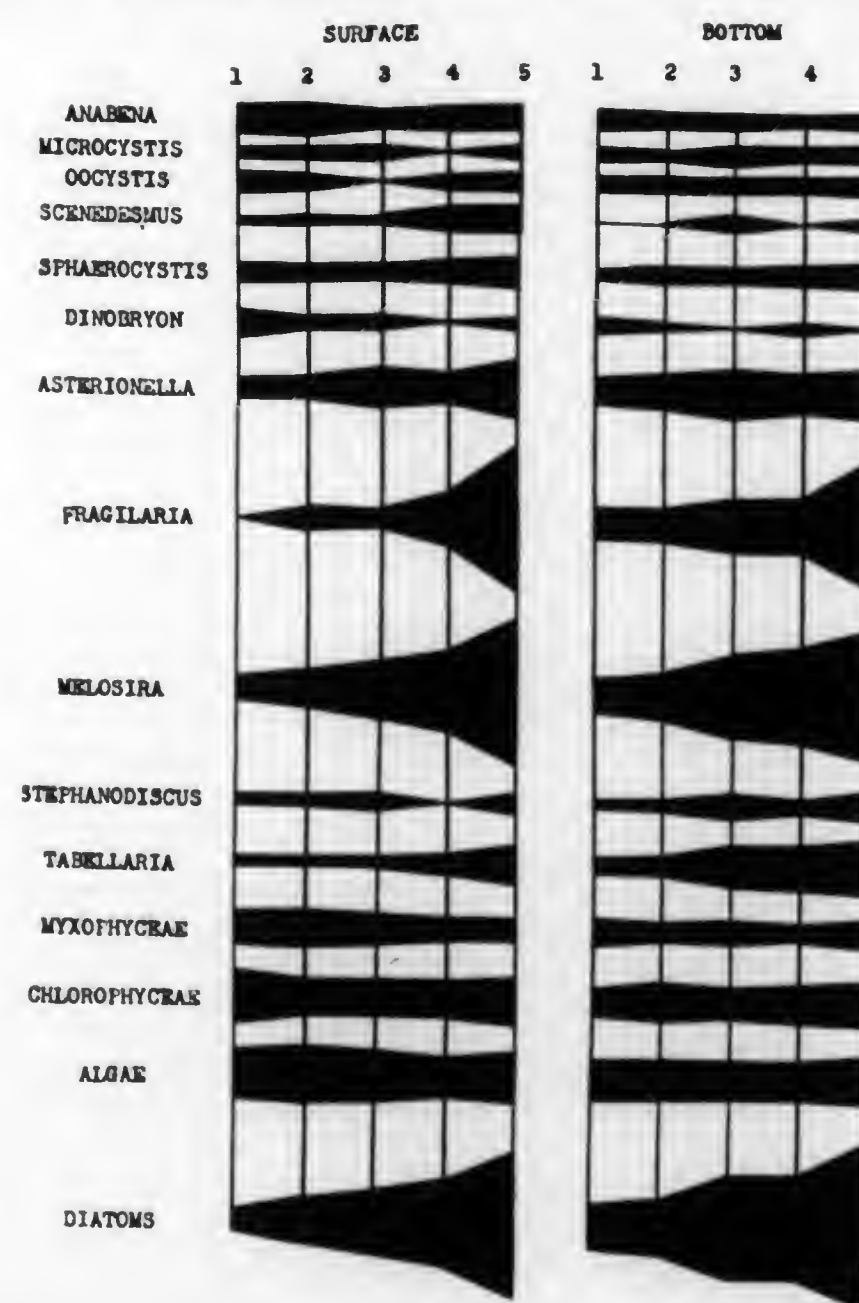


Fig. 3. Distribution of the Phytoplankton in Presque Isle Bay during the Summer of 1929. The numbers heading the graph indicate: 1, July 15-31; 2, Aug. 1-15; 3, Aug. 15-31; 4, Sept. 1-15; and 5, Sept. 15-30.

ceding summer's crop; 2, a great amount of Myxophyceae dominant during the latter part of the summer; 3, the decline of Chlorophyceae and diatoms during the fall. In the spring a crop of diatoms was produced, followed by a crop of Chlorophyceae in the summer, and finally an immense crop of Myxophyceae in the fall. The principal species of Chlorophyceae were *Scenedesmus quadricauda*, *Pediastrum duplex* and *Eudorina elegans*. The Myxophyceae crop was mainly composed of *Anabaena flos-aquae*, *Microcystis flos-aquae*, *Clathrocystis aeruginosa*, *Aphanothece nidulans*, *Aphanocapsa elachista*, *Aphanocapsa delicatissima* and a small unidentified *Chroococcus* which was present in considerable quantities during the fall. A bloom composed of *Microcystis*, *Clathrocystis*, and *Anabaena* with the addition of *Eudorina elegans* in considerable number occurred in the late summer of this year. The period of study did not take in the following decrease of Myxophyceae and the fall maximum diatom production although this was probable because of its occurrence in the Lake. It was later, however, than during the fall of 1929.

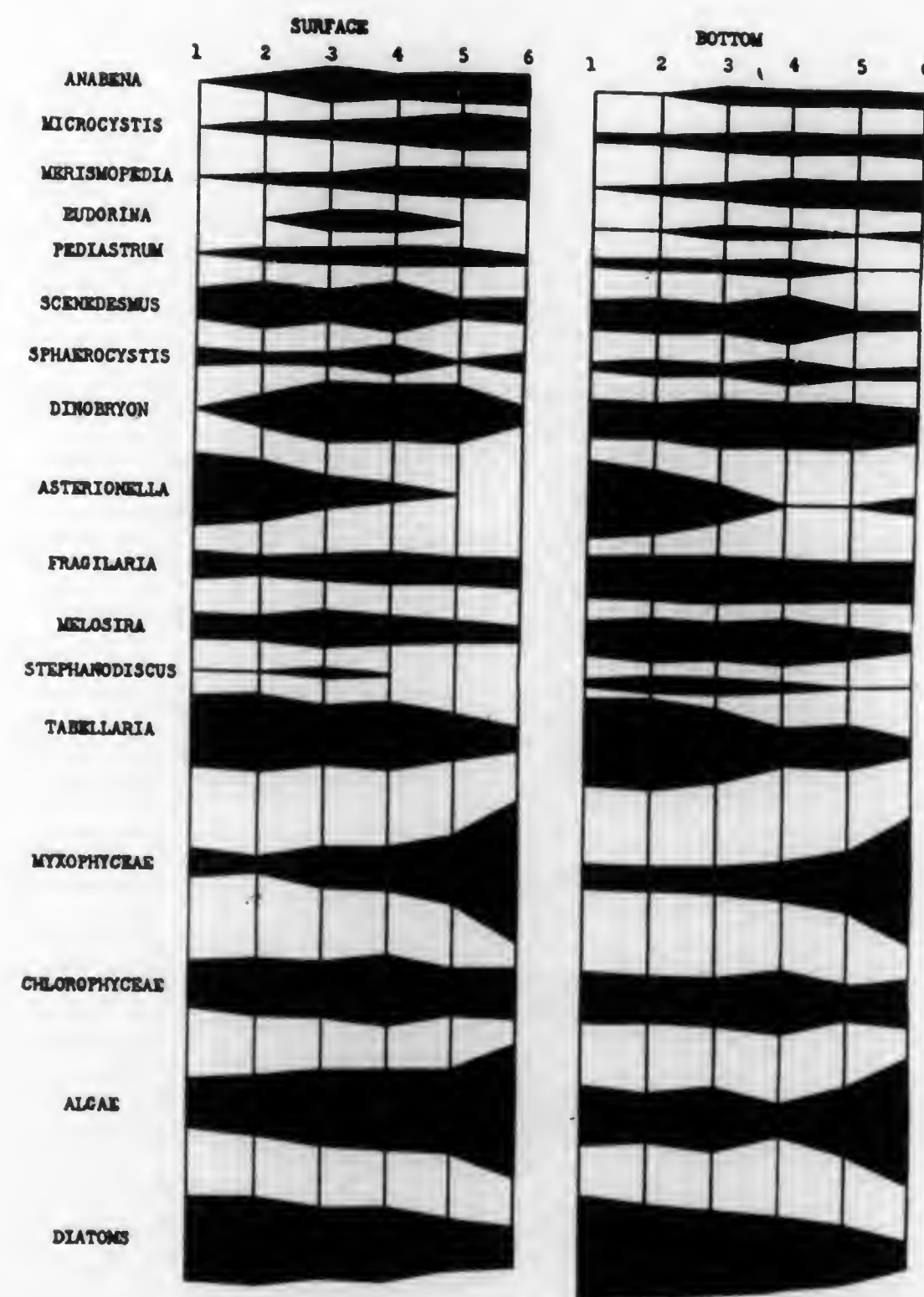


Fig. 4. Distribution of the Phytoplankton in Presque Isle Bay during the Summer of 1930. The numbers heading the graph indicate: 1, June 15-30; 2, July 1-15; 3, July 15-31; 4, Aug. 1-15; 5, Aug. 15-31; and 6, Sept. 1-15.

Not only was the phytoplankton crop greater during the summer of 1930, but the number of species also increased, many more species being found than heretofore.

Horizontal and Vertical Distribution

The phytoplankton in the Bay was found to be comparatively evenly distributed horizontally during the two summers in which the phytoplankton was studied.

The vertical studies indicated that the Chlorophyceae and Myxophyceae remained in the upper two meters of water in greatest abundance while the diatoms were usually more abundant in the four to eight meter level.

The data showed that the surface and bottom did not necessarily contain the greatest phytoplankton crop and that very often these samples were even the poorest in yield. The data, however, together with the seasonal distribution, give a good indication as to the entire crop of phytoplankton in the open waters of the Bay.

LIST OF PHYTOPLANKTON DETERMINED

Myxophyceae

Anabaena flos-aquae (Lyngbye) de Brebisson
A. lemmermanni P. Richter
Aphanocapsa elachista W. & S. G. West
var. *conferta* W. & S. G. West
A. delicatissima W. & S. G. West
Aphanothece nidulans P. Richter
Chroococcus limneticus Lemm.
Clathrocystis aeruginosa Kützing
Gomphosphaeria aponina Kützing
Merismopedia elegans A. Br.
M. glauca (Ehr.) Näg.
M. tenuissima Lemm.
Microcystis flos-aquae (Wittr.) Kirchner
Oscillatoria sp.

Chrysomonadineae

Dinobryon divergens Imhof.
D. stipitatum Stein

Peridineae

Ceratium hirundinella Müller
Peridinium sp.

Heterokontae

Botryococcus braunii Kützing
Chlorobotrys regularis (W. West) Bohlin
Ophiocytium capitatum Wolle

Isokontae

Actinastrum gracillimum G. M. Smith
A. hantzschii Lag.
Ankistrodesmus falcatus (Corda) Ralfs
Characium ambiguum Herm.
C. limneticum Lemm.
C. nagei A. Br.
Cladophora glomerata Kg.
Coelastrum microporum Näg.
C. reticulatum (Dang.) Senn
Crucigenia irregularis Wille
C. rectangularis (Näg.) Gay
Dictyosphaerium ehrenbergianum Näg.
D. pulchellum Wood
Elaktothrix viridis (Snow) Printz.
Eudorina elegans Ehr.
Kirchneriella lunaris (Kirchner) Möbius
K. obesa (W. West) Schmidle
Oocystis borgei Snow
O. elliptica W. West
O. lacustris Chodat
Pandorina morum Bory
Pediastrum boryanum (Turp.) Menegh
P. duplex Meyen
P. simplex Meyen
Polyedrium muticum A. Br.
Quadrigula lacustris Chodat
Scenedesmus arcuatus Lemm.
S. armatus (Chodat) G. M. Smith
S. bijuga (Turpin) Lagerheim
S. dimorphus (Turpin) Kütz.
S. quadricauda (Turpin) de Breb.
Selenastrum gracile Reinsch.
Sphaerocystis schroeteri Chodat.
Stigeoclonium sp.
Tetraedron trigonum (Näg.) Hansg.
Tetraspora sp.
Volvox globator L.

Akontae

Closterium bioculatum De Breb.
C. diana Ehrb.
C. granatum De Breb.
C. moniliferum (Bory) Ehrb.
C. primum De Breb.
Cosmarium tetraphthalmum Kütz.
C. tinctum Ralfs
Spirogyra tenuissima (Hass.) Kütz.

Bacillariales

Amphiprora ornata Bail.
Asterionella formosa Hass.

Cocconeis placentula Ehrb.
Cyclotella comta (Ehrb.) Kütz.
Cymatopleura elliptica (Bréb.) Wm. Sm.
Cymbella cistula (Hempr.) Grun.
C. prostrata (Berkeley) Cleve
C. tumida (Bréb.) V. H.
Diatoma elongatum Agardh.
D. vulgare Bory
Fragilaria crotonensis Kitton
F. virescens Ralfs.
Gomphonema capitatum Ehrb.
G. crenulata (Ehrb.) Kütz.
Gyrosigma acuminatum Kütz.
G. attenuatum Kütz.
Melosira crotonensis (Bail.) Smith
M. granulata (Ehrb.) Ralfs.
Meridion circulare Agardh.
Navicula cryptocephala Kütz.
N. longa Ralfs.
Nitzschia vermicularis (Kütz.) Grun.
Pinnularia socialis Palmer
Stauroneis phoenicenteron Ehrb.
Stephanodiscus niagara Ehrb.
Surirella anceps Lewis
S. splendida Kütz.
Synedra sp.
Tabellaria fenestrata (Lyngb.) Ktz.
T. flocculosa (Roth) Ktz.

DISCUSSION

The data obtained indicate that during the two years of study the phytoplankton crop was enormous both in the Bay and in the Lake and capable of supporting a large animal population. At no time did the crop fall below 25,000 plankton forms per liter. The diatoms were usually predominant and represented the bulk of the phytoplankton crop throughout most of the year. These results are in harmony with the results of Burkholder (1929).

The oxygen content was practically the same as that found by Williams (1929) in Lake Erie. During August when putrefactive processes were greatest and in the winter when the Bay was covered with ice, a low oxygen content was never observed. These results are further confirmed by the low free carbon dioxide content and the pH. The south shore of Presque Isle Bay was polluted but mixing was so thorough that one-half mile north of the sewer outlets bacterial analyses alone showed evidence of pollution. At one sewer outlet, however, several mills emptied sewage into the Bay and here the phytoplankton was destroyed and the pH and oxygen content was considerably lowered. This area covered about 7,200 square feet of water. Beyond this the discharge could not be detected by the analyses made. A complete chemical analysis would probably still have given an indication of mill wastes.

Taking all these results into consideration, the Lake and Presque Isle Bay from the south shore of Presque Isle to the center were contami-

nated; while from the center to its south shore it showed a progressively greater pollution. These results are further verified by the distribution of fish. They were always most abundant in the purer waters and absent in the heavily polluted areas.

CONCLUSIONS

1. The waters of Presque Isle Bay were moderately hard containing approximately 21 cc. of fixed carbon dioxide per liter. The free carbon dioxide content was never more than 5.0 parts per million.
2. The pH ranged from 7.4 to 8.4.
3. The average oxygen content was found to be 83 per cent of saturation in Presque Isle Bay during August, 1930.
4. The fixed carbon dioxide content in that part of the Lake studied, the free carbon dioxide content, and the oxygen content was practically the same as in the Bay. The pH however had a narrower range, i. e., between 7.9 and 8.4.
5. The crop of phytoplankton throughout the year was enormous and capable of supporting a large animal population.
6. Conditions in the part of the Lake studied and the south shore of Presque Isle only, were found to be favorable for fish life.

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ACKNOWLEDGMENTS

The Board is deeply grateful and hereby acknowledge its debt to fishermen of the Commonwealth for their loyal support, whether they acted as individuals or through one of the several active Associations throughout the Commonwealth.

The organization of the Pennsylvania Federation of Sportsmen's Clubs, we believe was one of the outstanding conservation steps in many years and with the representative members, it should go far towards making Pennsylvania's future safe for the fishermen.

We are extremely grateful to the Press for the publicity which has appeared in the various papers throughout the Commonwealth.

The management of the Fish Commission has had the loyal assistance of employees, who have served their Commission effectively and who have cooperated faithfully in bringing about the important accomplishments of the biennium.

FINANCIAL STATEMENTS

CHARTS

and

STATISTICS

PERIOD

June 1, 1931-May 31, 1933

BUDGETARY CONTROL IN FISH PROPAGATION AND DISTRIBUTION

On the following pages will be found Financial Statements and Statistics for the period covered by this report.

The question of fish propagation and distribution in relation to the budget is a most important function of the Fish Commission, as it requires a plan of budgetary control which sets up sane and sound quotas for the Board's expenditures. If we fail in this, the whole structure crumbles, and it is only a question of time until hatcheries must be abandoned or other important units eliminated.

Fortunately for the fishermen of Pennsylvania they have a Board of Fish Commissioners as keenly interested in the receipts and disbursements as in propagation and distribution of fish.

Over a period of years they have anticipated a natural expansion so that more and larger fish would be available for the waters of the Commonwealth, but the plan has been sound to the core and ample provision was made so that funds were available before work was commenced.

The Fish Commission exists wholly on receipts from sale of licenses, etc., which means that insofar as the taxpayers of the Commonwealth are concerned, they do not contribute one penny, either directly or indirectly for the maintenance of any of its activities.

Several years elapsed before the fisherman were able to have enacted a License Law, but it was realized by everyone interested in Pennsylvania's future fishing that the appropriations from the Legislature would never be sufficient to meet the demands which were being made and unless more money was available, it would not even be possible to maintain the hatcheries in operation.

The License Law became effective January 1, 1922—six hatcheries were then in operation—located at Pleasant Mount, Wayne County—Erie, Erie County—Union City, Erie County—Corry, Erie County—Bellefonte, Centre County and Torresdale, Philadelphia County.

As an accurate sales forecast could not be made, it became apparent that it would be necessary to put on a sales campaign to stimulate purchases. Upon contacting fishermen and Associations, there was immediately created a spirit of cooperation which was little dreamed of under appropriations.

With this thought in view, the Board outlined an intelligent building program which consisted of the completion of present hatcheries and the establishment of new ones.

The only way a program of this magnitude could be successfully consummated was to set aside each year an amount, which of course, was dependent upon the yearly receipts. This continued over a period of eight years until several hundred thousand dollars were available.

By action of the Board a program was definitely formulated, including in all, ten hatcheries, six of which were already in operation. In the preparation of the 1929-1931 and 1931-1933 Budgets, provisions were made for the purchase of land, contracted buildings, construction, etc., to put this program into effect. Work was commenced on the construction of the Tionesta and Reynoldsdale hatcheries, and at the same time additional construction work was provided for at hatcheries already in operation.

The 1931-1933 Budget shows that the amount accumulated was considerably reduced and while the balance at the end of the biennium shown is approximately \$311,000, it is estimated this will be increased considerably owing to the fact that operations will be somewhat under estimates. It is a well known fact among fish culturists that in hatchery construction all work must be carried on with extreme care so there will be no over-development of the water supply.

During 1932 the Tionesta and Reynoldsdale hatcheries were so far completed that they went into peak production. It was therefore, decided that the Board needed no additional hatcheries but did need rearing plants, or what might be termed "Rearing Farms." In order to further this program, site for this purpose was purchased at Huntsdale, Cumberland County in August, 1932, and development immediately started. In January, 1933, "The Bertram Tract" was purchased in Centre County, which will be a stream development and trout rearing station.

Without question, the program as outlined will be completed during 1934. At the present cost of operating major hatcheries, the Board of Fish Commissioners can safely say that all of its activities can be operated efficiently on its present income with only a slight increase in hatchery personnel.

The Board believes it is good business to formulate and carry out a program such as is referred to.

If for any reason the license income should take a decided drop, the Board could cut hatchery construction which in no way would impair the present distribution and when income was again normal could proceed with the program as outlined.

The Board is of the opinion that an emergency of this kind will not prevail owing to the continued enthusiasm and cooperation shown by over eight hundred active Associations in Pennsylvania.

BOARD OF FISH COMMISSIONERS
FINANCIAL STATEMENT—June 1, 1930 to May 31, 1931

Balance—June 1, 1930		\$462,868.69
RECEIPTS		
Fines		
Commercial Hatchery Licenses	\$22,670.50	
Shad Seine Licenses	810.00	
Lake Erie Licenses	34.00	
Non Resident Fishing Licenses—Office	5,282.00	
Non Resident Fishing Licenses—Counties	1,019.70	
Interest	19,301.05	
Resident Fishing Licenses—Office	13,458.39	
Resident Fishing Licenses—Counties	6,685.87	
Contributions for Stocking Streams	376,915.25	
Sale of Unserviceable Property (D. P. S.)	5,200.00	
Miscellaneous	718.90	
	5.88	452,101.54
Totals		\$914,970.23
EXPENDITURES		
Salary of Commissioner	6,000.00	
Office Salaries	14,775.00	
Printing	2,004.56	
Hatching & Propagating	194,740.10	
Expenses—Board Members Etc.	7,978.09	
Legal Expenses	553.00	
Salaries & Expenses of Wardens	59,689.85	
Office Expenses	12,738.73	
Operating Boat on Lake Erie	5,422.82	
Field Work	15,892.41	
Buildings, Ponds, Etc.	76,283.47	
Research & Publicity	2,890.14	
Purchase of Land	1,000.00	
Total by Board of Fish Commissioners	399,968.17	
By Department of Revenue	10,904.27	
Totals		410,872.44
Balance in Fish Fund—May 31, 1931		\$504,097.79

FINANCIAL STATEMENT—June 1, 1931 to May 31, 1932

Balance June 1, 1931		\$504,097.79
RECEIPTS		
Fines		
Commercial Hatchery Licenses	\$15,903.86	
Shad Seine Licenses	815.00	
Lake Erie Licenses	20.00	
Non Resident Fishing Licenses	4,581.00	
Interest	19,026.65	
Resident Fishing Licenses	13,107.40	
Contributions for Restocking Streams	371,974.50	
Motor Boat Licenses	8,250.00	
Sale of Unserviceable Property	5,826.00	
Miscellaneous	1.68	
	10.36	439,516.45
Total Funds Available		\$943,614.24
EXPENDITURES		
Salary of Commissioner	6,000.00	
Office Salaries	14,280.00	
Printing	2,599.04	
Hatching & Propagating	221,162.43	
Expenses—Board Members Etc.	5,395.42	
Legal Expenses	315.29	
Salaries & Expenses of Wardens	71,437.16	
Office Expenses	14,765.26	
Boat Patrol	26,633.22	
Field Work	20,347.92	
Buildings, Ponds Etc.	60,779.00	
Publicity & Research	3,674.94	
Expended by Revenue Department	10,540.35	457,930.03
Balance June 1, 1932		\$485,684.21

FINANCIAL STATEMENT—June 1, 1932 to May 31, 1933

Balance—June 1, 1932		\$485,684.21
RECEIPTS		
Fines		
Commercial Hatchery Licenses	\$8,040.00	
Lake Erie Licenses	940.00	
Non Resident Fishing Licenses	3,164.00	
Interest	15,425.55	
Resident Fishing Licenses	8,099.91	
Contributions for Restocking Streams	355,567.15	
Motor Boat Licenses	8,000.00	
Sale of Unserviceable Property	5,352.00	
Miscellaneous	32.00	
	4.04	404,624.65
Total Funds Available		\$890,308.86
EXPENDITURES		
Salary of Commissioner	6,000.00	
Office Salaries	14,280.00	
Printing	952.75	
Hatching & Propagating	214,236.60	
Expenses—Board Members Etc.	3,561.43	
Legal Expenses	25.00	
Salaries & Expenses of Wardens	81,266.81	
Office Expenses	14,768.51	
Boat Patrol	8,440.30	
Field Work	28,054.62	
Buildings, Ponds Etc.	69,959.75	
Publicity & Research	5,282.25	
Purchase of Land & Water	27,225.03	
Expended by Revenue Department	10,300.66	\$484,353.71
Balance June 1, 1933		\$405,955.15

BOARD OF FISH COMMISSIONERS

**DATA IN RE: NUMBER OF RESIDENT AND NON-RESIDENT FISHING
 LICENSES ISSUED SINCE THE LAWS BECAME EFFECTIVE**

RESIDENT (Effective January 1, 1922)			NON-RESIDENT (Effective July 8, 1919)		
Year	Number	Cost	Year	Number	Cost
1922	203,061	\$1.00 each	1919	50	\$5.00 each
1923	214,392	\$1.00 each	1920	1,836	\$5.00 each
1924	247,281	\$1.00 each	1921	2,031	\$5.00 each
1925	250,873	\$1.00 each	1922	2,768	\$5.00 each
1926	261,109	\$1.00 each	1923	2,931	\$5.00 each
1927	293,397	\$1.00 each	1924	2,964	\$5.00 each
1928	255,275	\$1.50 each	1925	3,182	\$5.00 each
1929	263,633	\$1.50 each	1926	3,759	Reciprocal
1930	264,589	\$1.50 each	1927	3,874	Reciprocal
1931	250,940	\$1.50 each	1928	4,644	Reciprocal
1932	242,863	\$1.50 each	1929	4,821	Reciprocal
			1930	4,739	Reciprocal
			1931	4,122	Reciprocal
			1932	3,357	Reciprocal

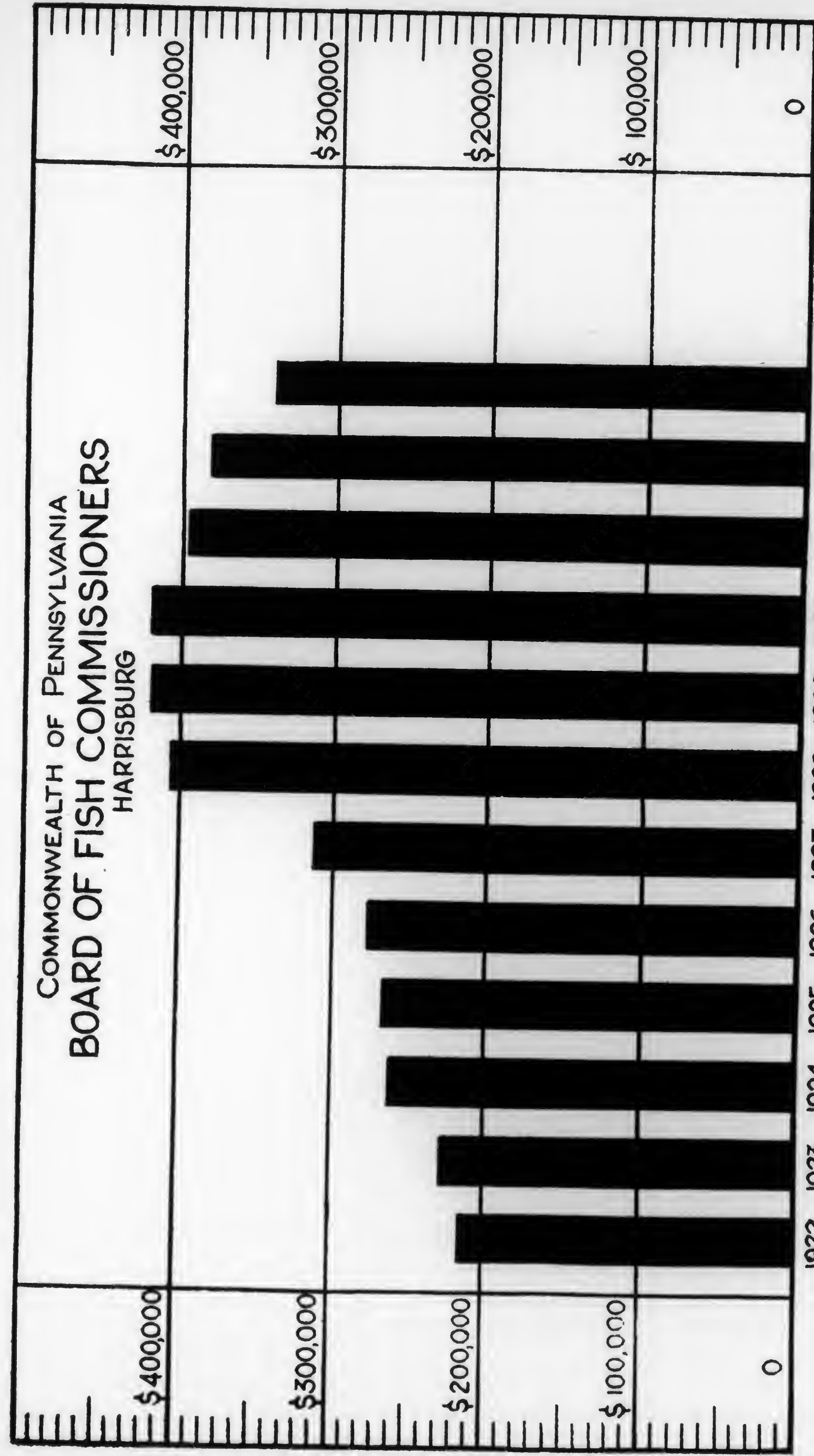


Diagram showing variation in receipts from Resident and Non-Resident Fishing Licenses
 * Resident Licenses increased to \$150 January 1928

STATEMENT OF PROSECUTIONS FOR VIOLATIONS OF THE FISH LAWS
Calendar Year 1930

Charge	Number of arrests
Illegal Devices	242
No License	323
Sunday Fishing	41
Short Fish	71
Aliens Fishing	19
Explosives	25
Fish Out of Season	37
Loaning License	25
False Information	3
Frogs with Light	4
Frogs out of Season	7
Drawing Dams	2
Pollution	12
Exceeding Creel Limit	17
License Not Signed	2
Total	830
Total Fines	\$21,715.00

STATEMENT OF PROSECUTIONS FOR VIOLATIONS OF THE FISH LAWS
Calendar Year 1931

Charge	Number of arrests
Illegal Devices	230
No License	391
Sunday Fishing	38
Short Fish	77
Aliens Fishing	32
Explosives	26
Fish Out of Season	71
Loaning License	40
False Information	2
Frogs with Light	7
Frogs Out of Season	7
Drawing Dams	5
Fishing on Hatchery Grounds	1
Pollution	10
Exceeding Creel Limit	22
Operating Motor Boat without License	2
Selling Trout	1
Total	962
Total Fines	\$17,566.00

STATEMENT OF PROSECUTIONS FOR VIOLATIONS OF THE FISH LAWS
Calendar Year 1932

Charge	Number of arrests
Illegal Devices	202
No License	214
Sunday Fishing	27
Short Fish	65
Aliens Fishing	13
Explosives	27
Fish Out of Season	72
Loaning License	22
Frogs with Light	8
Frogs Out of Season	26
Pollution	1
Exceeding Creel Limit	13
Tadpoles Out of Season	2
Assisting Violator to escape from Warden	1
Resisting Arrest	1
Using Borrowed License	17
False License	8
Fishing without wearing button in sight	2
Operating Motor Boat Without License	1
Total	722
Total Fines	\$10,576.86

REPORT OF CATCH OF FISH IN LAKE ERIE
PENNSYLVANIA WATERS, YEAR 1930

Species	Pounds	Estimated Value
Yellow Perch	78,641	\$5,013.22
Blue Pike	2,372,367	103,876.15
Cisco	241,441	27,029.29
White Fish	839,837	175,183.16
Mullets	15,199	430.32
Pike Perch	13,268	1,165.59
Sturgeon	1,283	501.50
Lake Trout	2,780	375.35
White Bass	23,832	1,191.60
Gray Bass	10,496	419.84
Miscellaneous	23,970	1,374.69
Total	3,643,134	\$317,160.71

REPORT OF CATCH OF FISH IN LAKE ERIE
PENNSYLVANIA WATERS, YEAR 1931

Species	Pounds	Estimated Value
Yellow Perch	480,214	\$21,037.83
Blue Pike	3,080,090	164,873.27
Cisco	127,599	14,752.58
White Fish	633,479	108,407.36
Pike Perch	14,200	1,778.65
Sturgeon	358	107.40
Catfish	11,496	1,109.76
Lake Trout	1,257	170.35
Miscellaneous	58,545	2,077.31
Total	5,008,147	\$314,364.51

COMMONWEALTH OF PENNSYLVANIA
BOARD OF FISH COMMISSIONERS

REPORT OF CATCH OF FISH IN LAKE ERIE
PENNSYLVANIA WATERS, YEAR 1932

Species	Pounds	Value
Yellow Perch	331,278	\$13,768.34
Blue Pike	1,611,675	69,870.91
Cisco	82,836	8,877.65
White Fish	447,378	73,298.54
Pike Perch	13,832	2,039.64
Sturgeon	537	121.05
Catfish	3,972	279.42
Lake Trout	1,051	106.65
Carp	6,871	166.08
Burbot *	4,642	98.93
Mullets	9,466	191.94
White Bass	2,522	87.98
Gray Bass (Sheep's Head)	3,650	54.14
Miscellaneous	1,421	54.40
Total	2,521,161	\$169,015.67

* 42,000 Burbot given to Charity.

RESIDENT CITIZEN'S FISHING LICENSES ISSUED
Calendar Years 1925-1932, Inc.

	1925	1926	1927	1928	1929	1930	1931	1932
Total	250,873	261,109	293,397	255,275	263,633	264,589	250,940	242,863
Office of Board	8,268	7,599	7,181	5,906	5,807	5,145	4,742	4,303
Fish Wardens	2,302							
County Treasurers								
Adams	1,134	1,294	1,148	1,087	974	883	729	828
Allegheny	9,956	10,545	11,698	10,595	11,151	11,453	11,257	10,264
Armstrong	1,925	1,771	2,761	2,175	2,305	2,559	2,369	1,954
Beaver	2,192	2,235	2,664	2,128	2,075	1,935	1,807	1,734
Bedford	1,978	1,951	2,174	1,603	1,731	1,722	1,635	1,517
Berks	8,448	9,406	10,272	8,177	8,799	9,157	9,054	8,332
Blair	6,037	6,073	6,799	5,681	5,902	6,004	5,896	5,952
Bradford	4,025	4,409	4,973	4,089	3,977	3,900	3,890	4,260
Bucks	1,885	2,011	2,121	1,882	1,800	1,971	2,335	2,001
Butler	3,950	3,032	3,372	2,563	2,458	2,487	2,250	2,140
Cambria	5,604	5,902	6,787	5,057	5,132	5,514	5,549	5,886
Cameron	731	827	924	909	1,088	1,091	597	738
Carbon	2,911	2,952	3,440	3,210	3,365	3,198	3,241	2,956
Centre	2,737	3,048	3,308	2,782	2,956	2,733	2,462	2,586
Chester	2,291	2,365	2,609	2,240	2,406	2,357	2,152	1,928
Clarion	1,483	1,587	2,053	1,856	1,515	1,880	1,844	1,740
Clearfield	3,667	4,193	4,831	4,082	4,119	4,055	2,063	2,944
Clinton	3,034	3,308	3,532	3,071	3,473	3,052	2,539	2,609
Columbia	3,440	3,508	3,753	3,261	3,489	3,388	3,205	2,867
Crawford	4,078	5,198	5,180	4,153	4,289	4,144	4,055	3,887
Cumberland	1,901	2,145	2,221	1,821	2,031	1,970	1,866	1,717
Dauphin	5,992	6,183	6,919	5,684	5,460	5,160	5,130	5,230
Delaware	949	1,107	1,248	1,172	1,104	1,226	1,226	1,209
Elk	1,712	1,926	2,502	2,447	2,500	2,753	1,838	2,223
Erie	8,415	9,117	10,365	9,296	9,041	9,225	7,586	6,500
Fayette	3,406	3,504	4,045	3,500	3,374	3,107	2,394	1,914
Forest	775	741	749	791	776	906	760	686
Franklin	2,031	1,994	2,037	1,820	2,077	2,140	1,762	1,759
Fulton	417	273	360	278	296	301	292	303
Greene	1,116	1,146	1,536	1,220	1,090	976	702	769
Huntingdon	2,250	2,096	2,415	1,783	1,841	1,807	1,960	1,093
Indiana	1,418	1,510	2,058	1,885	2,062	1,928	1,779	1,488
Jefferson	1,642	1,716	2,105	1,895	2,080	2,326	1,907	2,023
Juniata	829	682	855	696	715	716	630	647
Lackawanna	17,896	17,057	19,724	17,741	18,761	16,938	19,023	17,238
Lancaster	6,177	6,184	6,066	4,864	4,791	5,059	5,395	5,515
Lawrence	2,944	3,222	3,640	2,802	3,087	3,011	3,160	2,484
Lebanon	2,363	2,508	2,490	2,109	2,310	2,442	2,289	2,173
Lehigh	6,534	8,089	9,209	8,197	9,144	8,822	7,635	6,659
Luzerne	18,296	18,403	23,167	21,376	22,346	23,330	22,844	23,905
Lycoming	6,881	7,570	8,496	7,729	8,417	8,334	7,618	7,336
McKean	2,471	2,703	3,312	3,120	3,349	3,914	2,894	4,081
Mercer	4,172	4,566	5,022	3,993	4,172	4,252	3,461	2,947
Mifflin	2,311	2,402	3,050	2,378	2,361	2,430	2,215	2,080
Monroe	2,965	3,394	3,718	3,437	3,597	3,341	3,311	2,890
Montgomery	3,714	4,774	5,162	4,722	5,197	4,749	4,902	5,749
Montour	589	604	699	565	621	633	681	476
Northampton	3,474	3,676	3,888	3,620	4,059	3,877	4,210	3,776
Northumberland	4,966	4,774	5,457	4,671	4,407	4,507	4,532	4,687
Perry	646	585	801	615	550	597	574	505
Philadelphia	5,099	5,889	6,232	5,907	5,918	6,476	6,597	6,353
Pike	704	1,093	1,201	1,620	1,924	1,470	1,716	1,350
Potter	2,258	2,521	2,891	2,539	2,501	2,429	1,935	2,072
Schuylkill	5,029	5,333	6,569	6,648	6,717	6,878	6,112	5,937
Snyder	803	740	800	692	585	778	586	596
Somerset	2,895	2,971	3,526	2,901	2,653	2,556	2,281	1,923
Sullivan	713	749	785	703	797	700	655	638
Susquehanna	3,580	3,752	4,151	3,402	3,258	3,466	3,513	3,729
Tioga	2,476	2,495	2,721	2,400	2,536	2,611	2,345	2,554
Union	1,788	1,836	1,981	1,798	1,950	1,917	1,863	1,434
Venango	4,099	4,214	4,624	3,976	4,045	4,423	3,923	3,368
Warren	2,880	3,029	3,442	2,877	2,965	3,242	2,916	2,848
Washington	3,265	3,384	3,796	2,757	2,691	2,838	2,431	2,371
Wayne	2,858	3,120	3,264	3,346	3,196	4,254	3,755	4,033
Westmoreland	4,106	4,503	5,218	4,331	4,691	4,646	4,138	5,058
Wyoming	1,543	1,515	1,657	1,826	1,577	2,000	2,700	1,709
York	5,449	5,440	5,634	4,818	4,542	4,526	4,627	4,652

REPORT OF COMMERCIAL FISH HATCHERIES
Calendar Year 1930

Species	Number	Pounds	Eggs	Value
Brook Trout—Market				
Brook Trout—Live Mature	132,022	36,666		\$31,700.95
Brook Trout—Advance Fry	280,165			24,640.25
Brook Trout—Green Eggs			5,650,000	6,122.03
Brook Trout—Eyed Eggs			21,125,972	5,287.50
Rainbow Trout—Market				21,113.21
Rainbow Trout—Live Mature	11,449	641		813.19
Rainbow Trout—Eyed Eggs			1,430,600	1,456.31
Baitfish	471,383			2,005.00
Goldfish	84,502			11,624.30
Sunfish	4,410			1,327.99
Miscellaneous	3,664			225.50
Total	987,595	37,307	28,206,572	\$106,529.28

REPORT OF COMMERCIAL FISH HATCHERIES
Calendar Year 1931

Species	Number	Pounds	Eggs	Value
Brook Trout—Market				
Brook Trout—Live Mature	186,553	47,578		\$38,275.44
Brook Trout—Advance Fry	459,555			28,520.57
Brook Trout—Green Eggs			7,567,000	9,828.53
Brook Trout—Eyed Eggs			20,070,000	6,905.01
Rainbow Trout—Market				21,061.68
Rainbow Trout—Live Mature	31,114	415		623.36
Rainbow Trout—Eyed Eggs			818,000	1,082.38
Baitfish	455,703			1,277.00
Goldfish	80,335			11,284.15
Sunfish	5,960	40		1,629.04
Catfish		404		337.80
Miscellaneous	8,389			122.12
Total	1,227,609	48,437	28,455,000	\$121,043.63

REPORT OF COMMERCIAL FISH HATCHERIES
Calendar Year 1932

Species	Number	Pounds	Eggs	Value
Brook Trout—Market				
Brook Trout—Live Mature	217,693	37,816		\$25,820.03
Brook Trout—Advance Fry	278,156			32,678.35
Brook Trout—Green Eggs			4,700,000	5,563.12
Brook Trout—Eyed Eggs			12,227,500	4,150.00
Rainbow Trout—Market				12,936.52
Rainbow Trout—Live Mature	9,541	191		104.14
Rainbow Trout—Eyed Eggs			320,000	885.85
Rainbow Trout—Advance Fry	29,999			398.00
Brown Trout—Live Mature	8,288			367.50
Brown Trout—Fingerlings	17,000			1,619.79
Baitfish	411,061			255.00
Goldfish	128,956			8,813.96
Sunfish	2,112			2,314.59
Catfish		420		256.30
Miscellaneous	10,799			101.20
Total	1,113,605	38,427	17,247,500	\$96,539.92

**COMMONWEALTH OF PENNSYLVANIA
BOARD OF FISH COMMISSIONERS
HARRISBURG, PA.**

STATEMENT OF DISTRIBUTION OF FISH—JANUARY 1 TO DECEMBER 31, 1930

Species	Size	Age	Number	Value (If Purchased)
Trout	6" to 12"	5 to 36 months	817,002	\$173,812.05
Black Bass	4" to 14"	6 months to adult	336,427	102,486.50
Pike Perch	Fry to 28"	Fry to adult	17,141,685	9,198.71
Yellow Perch	Fry to 10"	Fry to adult	323,182,864	135,991.78
Sunfish	3" to 7"	4 to 36 months	1,439,690	78,617.40
Catfish	2" to 10"	5 to 36 months	899,340	58,112.60
Blue Pike	Fry	Fry	32,847,000	5,077.05
Cisco	1" to 4"	5 months to adult	4,000,000	600.00
Minnows	2" to 4"	5 months to adult	738,055	20,662.75
Frogs	4" to 23"	7 months to adult	366,900	12,517.50
Pickrel	Fry to 13"	Fry to adult	20,010	17,734.50
Suckers	1" to 2"	2 to 10 months	10,182,920	5,459.91
Miscellaneous			27,000	410.00
Total			391,998,893	\$421,680.75

(Distribution of Fish for Year 1930—Giving Value)

County	Trout	Black Bass	Pike Perch	Yellow Perch	Sunfish	Catfish	Blue Pike	Cisco	Minnows	Frogs	Pickrel	Suckers	Miscellaneous	Total for County	Value (If Purchased)
Adams					2,000	180								2,180	\$188.00
Allegheny			53,000	290,000	2,500	300								315,800	274.50
Armstrong	2,000		53,000	5,115,000	28,500	2,000								5,200,500	4,744.00
Beaver					9,000									9,000	360.00
Bedford	4,000	13,050	53,000	4,998,430	16,500	34,500			5,800					5,125,280	11,443.27
Berks		27,390		2,601,500	72,000	5,770			58,000					2,784,660	16,529.00
Blair	11,360				10,000	22,000			2,000					99,110	4,485.90
Bradford	7,680	9,250	58,000	3,813,247	18,800	40,500			6,000					4,542,601	12,019.78
Bucks		11,175	332,731	31,603,500	31,000	480	1,500,000		9,000		3,183			38,156,155	11,000.50
Butler	7,100			2,600,000	21,000	2,400			20,000					2,650,500	4,809.00
Cambridge	10,550			1,863,200	13,700	29,200								1,934,100	5,558.00
Carbon	33,920			404,205	14,000	4,740			35,000	8,400				491,265	8,272.50
															18,010.15

Centre	39,077	3,100	147,560	1,000,000	13,300	6,000			18,700					227,737	13,294.28
Chester	1,302		84,700	2,325,000	8,000	400			21,000					1,115,462	1,543.07
Clarion	28,150			1,860,000	39,500	1,700			18,000					2,331,500	1,892.50
Columbia	32,830	3,100	627,130	814,010	21,600	8,000			7,000	10,000				1,957,350	11,551.50
Crawford	2,100	7,500	1,084,565	21,400,000	116,000	12,500			3,900	20,000				706,060	10,383.26
Cumberland	42,821	13,480	199,206	7,000	15,200	2,830			10,500					3,685,964	15,091.08
Dauphin	1,200			200	4,500	400			4,000					22,746,650	21,785.50
Delaware	1,700			1,000,000	2,250	120								1,948,316	17,463.02
Elk	29,540			7,500,000	6,000	1,125			15,000					220,306	1,961.60
Erie	5,000		234,500	375,000	76,300	1,000			5,000					1,004,070	1,010.00
Lake Erie				132,900,000	20,000	1,500								7,551,665	12,722.15
Payette			154,100	400,000	6,000	1,000								697,800	6,903.75
Forest	11,250	15,738	784,250	7,518,200	13,300	4,200	31,347,000	4,000,000						108,307,000	25,246.05
Franklin	3,470		627,130											585,600	1,967.05
Fulton	800													8,821,958	13,059.48
Greene			600,000	5,950,000	4,500	3,000			24,000					694,000	1,535.46
Huntingdon	2,760	19,925	53,000	10,350	23,800	18,300			50,000					800	288.00
Indiana			53,000	3,720,000	12,200	8,475			7,200					6,007,500	5,725.00
Jefferson	19,175		106,000	3,250,000	4,000				5,000					136,995	10,702.90
Juniata	6,560				25,600	29,600			3,000					3,751,000	2,366.50
Lancaster	16,372			6,681,931	42,350	8,905			9,950					3,294,850	8,268.25
Lawrence	5,520	21,428	2,100,380	5,517,300	12,000	2,600			17,000					6,736,803	9,400.35
Lebanon	22,500		368,500	1,000,000	28,000	11,100			52,000					7,705,839	15,521.20
Lehigh	5,760			9,000	4,200				20,000					1,422,600	8,701.25
Luzerne	25,445								3,000					65,860	5,350.40
Lycoming	87,478		442,680	5,098,998	84,900	73,600			46,000					52,645	7,495.30
McKean	23,300	13,890	234,500	3,636,000	60,850	2,250			52,000					5,886,176	22,853.27
Mercer	30,410			6,000	15,000	1,500			8,000					3,998,790	18,531.75
Mifflin	12,000		53,000	6,325,000	4,000	2,550			22,800					37,910	9,231.90
Monroe	19,220	8,788	169,400	1,815,747	28,400	74,790			45,700					69,000	3,746.50
Montgomery				2,400,000	31,500	1,980			9,000					2,163,978	18,992.47
Northampton	6,910		84,700	5,500	13,000	16,700			21,000					2,443,080	3,408.00
Northumberland				805,410	12,000	32,000			19,200					158,310	8,013.25
Perry	6,250		442,680	7,750	2,000	16,780			12,450					1,317,540	6,099.05
Philadelphia	26,250		627,130	3,000,000	77,000	59,150			16,505					3,000,000	750.00
Pike				23,313,160										26,029,061	47,610.86
Potter	11,740	15,979	307,618											30,845	8,970.20
Schenly	20,845			1,502,000	13,000	7,030			27,000					1,551,030	3,023.00
Snyder			405,790	2,014,650	32,500	8,000			15,000					2,477,890	4,993.42
Somerset	7,200	10,325		987,550	37,700	14,420			4,300					1,082,365	10,019.20
Sullivan	3,515				4,000	26,000			11,900					60,515	3,336.10
Susquehanna	69,792	16,375	376,278	416,500	44,115	62,380								4,599,810	21,536.24
Tioga	6,440			3,100	9,000	11,700								30,240	3,495.40
Union	7,304	10,800	346,766	3,720,000	4,000	1,000			20,000					408,870	7,683.54
Venango	6,405				7,000	1,000								4,010,155	5,981.70
Warren	23,860	21,837	1,470,250	8,622,500	10,000	1,200			32,400					10,609,487	21,289.22
Washington			700,000	900,000	32,500	2,000								1,644,500	2,620.00

County	Trout	Black Bass	Pike Perch	Yellow Perch	Sun-fish	Cat-fish	Blue Pike	Cisco	Minnows	Frogs	Pickrel	Suckers	Miscellaneous	Total for County Purchased	Value (If Purchased)
Wayne	54,003		265,608	1,843,950	87,575	149,160			96,000	28,000	600			2,525,796	27,767.22
Westmoreland	3,600	900		2,940	40,600	7,940								55,980	3,861.40
Wyoming	3,850	13,000	111,206	2,000	24,000	18,000			12,000	1,200	800			186,116	8,912.33
York		9,577	1,028,526	3,030	15,150	13,785			30,750					1,100,618	6,301.76
Total														391,998,803	\$4921,680.75

Name	Species of Fish or Eggs	Number	In Exchange for
Province of Ontario	Eyed Brook Trout Eggs	500,000	Adult Brood Bass
State of Michigan	Eyed Brook Trout Eggs	300,000	Eyed Lake Trout Eggs
United States Bureau of Fisheries	Eyed Brook Trout Eggs	50,000	Atlantic Salmon Eggs
United States Bureau of Fisheries	Brook Trout	50,000	Lake Trout Eggs
Exchanges where	Yellow Perch	500	Brook Trout Eggs
Brook Trout Eggs	Brook Trout	750	Brook Trout Eggs
were received	Adult Brown Trout	720	Adult Brook Trout
for other			
Species of Fish	Pike Perch	81	Brook Trout
	Bass	100	Brook Trout Eggs
	Sunfish	200	Brook Trout Eggs
Schools, Parks and Aquariums	Yellow Perch	200	Brook Trout Eggs
	Sunfish	10,000	Exhibition, Educational & Scientific Purposes
Schools, Parks and Aquariums	Catfish	618	Exhibition, Educational & Scientific Purposes
Schools, Parks and Aquariums	Goldfish	1,212	Exhibition, Educational & Scientific Purposes
Schools, Parks and Aquariums	Brook Trout	219	Exhibition, Educational & Scientific Purposes
Schools, Parks and Aquariums	Yellow Perch	296	Exhibition, Educational & Scientific Purposes
Schools, Parks and Aquariums	Frogs	63	Exhibition, Educational & Scientific Purposes
Schools, Parks and Aquariums	Miscellaneous	34	Exhibition, Educational & Scientific Purposes
Individuals	Catfish	1,820	To Assist in Starting Fish Ponds
Individuals	Sunfish	15,500	To Assist in Starting Fish Ponds
Individuals	Frogs	5,000	To Assist in Starting Fish Ponds

Species	Size	Age	Number	Value (If Purchased)
Trout	6" to 12"	14 to 36 months	1,000,604	\$230,205.92
Black Bass	4" to 14"	5 months to adult	387,474	86,611.00
Pike	Fry to 28"	Fry to adult	22,635,242	11,129.74
Yellow Perch	Fry to 10"	Fry to adult	375,942,140	216,266.56
Sunfish	3" to 7"	4 to 36 months	1,028,450	57,203.00
Catfish	2" to 10"	5 to 36 months	1,668,375	39,189.10
Blue Pike	Fry	Fry	104,952,250	26,238.06
Cisco	Fry	Fry	8,100,000	1,215.00
White Fish	Fry	Fry	1,500,000	225.00
Minnows	1" to 4"	5 months to adult	2,062,800	23,960.00
Frogs	2" to 4"	5 to 17 months	904,200	45,210.00
Pickered	4" to 28"	7 months to adult	5,757	5,757.00
Suckers	Fry to 13"	Fry to adult	1,764,850	1,493.98
Lake Trout	1 1/2" to 2"	5 months	86,315	2,330.50
Total			521,038,457	\$747,094.86

[illegible]

(Distribution of Fish for Year 1931—Giving Value)—Continued

County	Trout	Black Bass	Pike Perch	Yellow Perch	Sunfish Catfish	Blue Pike	Cisco	White Fish	Minnows	Frogs	Pick- ered	Suckers	Lake Trout	Total for County	Value (If Purchased)
Clarion	10,511	1,750	231,360	214,000	24,000	2,400				20,000		111,130		621,141	7,570.63
Clearfield	45,200	345,000	5,723,000	5,723,000	1,750	3,300								6,118,310	15,215.42
Columbia	48,110	12,250	460,000	2,800,500	2,800,500	500			110,000			8,700		3,440,000	16,203.00
Crawford	15,760	3,500	255,800	1,870,558	15,250	10,100			7,500	100,500		300,000		2,160,928	9,620.50
Cumberland	13,600	17,500	3,137,056	15,369,800	92,850	10,100			140,000					19,087,906	26,989.40
Dauphin	24,480	21,125	360,000	1,106,000	10,500	3,350			9,000					1,665,455	13,439.08
Delaware	9,120	14,000	197,710	3,707,116	7,000	2,580								3,946,976	7,874.34
Elk	32,295	5,075		3,640,000	4,000	2,580								3,631,655	3,135.50
Erie	9,100	1,750	230,000	1,400,000	10,000	1,000				6,400		250,000		1,449,695	9,650.95
Lake Erie	3,500	1,243,000	136,000,000	7,500,000	66,300	11,800	8,100,000	1,500,000		46,000				8,174,950	13,548.00
Fayette	10,440	216,900	216,900	1,155,600	2,500	250			15,000	4,000				231,798,750	62,828.81
Forest	25,842	5,750	992,920	7,575,400	8,000	1,400			160,000					1,389,690	3,764.21
Franklin	28,360	7,000	190,000	1,547,800	22,000	2,120				12,000		188,673		8,824,985	14,646.43
Fulton	25,760	8,750	300,000	1,235,000	4,000	2,100				13,000				1,947,290	12,414.66
Greene	31,300	10,325	173,520	1,048,600	16,000	1,400			80,000	18,000				1,588,610	6,153.50
Huntingdon	18,300	5,250	632,500	7,006,000	44,800	3,400			9,000					1,261,845	3,765.56
Indiana	13,448	10,075		1,334,800	38,000	2,750				14,400				7,821,250	15,478.25
Jefferson	5,600	8,575	514,046	2,449,600	20,500	2,200								1,448,585	12,294.90
Junata	3,080			6,000	9,000	540								543,761	6,094.72
Lackawanna	3,520	31,325	1,931,684	7,054,078	31,400	3,400			12,600	16,000		72,420		7,088,558	10,024.74
Lancaster	13,200	8,750	48,200	2,140,000	14,500	11,400			3,000	20,000				6,606,229	14,271.07
Lawrence	9,480	1,750	480,000	4,160,250	5,500	450			100,000	16,000				2,259,050	8,364.10
Lebanon	13,760	1,750	116,300	1,832,005	13,600	3,600			92,000	16,000	510	1,500		4,657,430	5,695.40
Luzerne	27,200	12,875		4,200,748	3,000	3,000			100,000	16,000				1,978,365	6,927.36
Lycoming	45,840	3,500	850,000	5,457,000	15,900	1,980			80,000	18,000				7,080,696	20,089.57
McKean	13,000	5,075	345,000	3,190,000	5,000	300			20,000	8,000				4,245,250	13,276.66
Mercer	15,200	3,500	69,780	3,894,040	32,500	10,150			155,000					1,151,720	13,815.80
Monroe	2,480	10,500	230,274	1,426,748	4,250	4,000			60,000					6,444,830	13,275.70
Montgomery	14,080	3,500	302,380	632,500	10,000	3,000			113,000	4,000				3,510,655	4,171.00
Montour	17,580	4,074	302,570	1,600,000	6,000	3,000								4,157,820	12,502.98
Northampton	58,800	3,500	302,570	9,400,521	69,250	300								8,361,630	11,390.72
Northumberland	6,874	8,750	297,400	1,835,005	28,500	3,320			3,000					1,664,772	2,621.39
Perry	19,300	3,500	168,700	1,635,558	26,500	6,880						24,140		1,060,000	6,483.64
Philadelphia	14,560	10,325	240,000	4,196,400	22,000	1,140								288,387	3,487.75
Pike	17,580	4,074	302,570	1,600,000	6,000	3,000								422,290	4,551.43
Potter	58,800	3,500	302,570	9,400,521	69,250	300								1,600,000	800.00
Schuylkill	6,874	8,750	297,400	1,835,005	28,500	3,320								10,030,005	27,373.70
Snyder	19,300	3,500	168,700	1,635,558	26,500	6,880								2,171,600	14,908.96
Somerset	14,560	10,325	240,000	4,196,400	22,000	1,140								1,874,209	5,728.58
Sullivan	14,560	10,325	240,000	4,196,400	22,000	1,140								2,161,873	5,758.06
Total	6,720	3,500	81,140	10,706,335	1,800	120,900								1,405,135	9,546.65
Susquehanna	6,720	3,500	81,140	10,706,335	1,800	120,900								2,026,665	9,670.84
Tioga	15,080			3,512,000	8,000									521,088,457	\$747,084.86
Union	25,620	3,500	162,820	2,808,890	6,500				3,000					10,997,335	23,138.74
Venango	13,229	3,500	677,920	3,442,000	20,000	4,800								3,535,080	7,358.06
Warren	28,045	5,750	1,862,200	3,977,000	41,250	6,350			7,500					3,063,110	10,106.05
Washington	4,550	10,500	383,790	2,182,800	27,500	1,950			15,000					4,182,449	8,442.41
Wayne	18,280	10,500	383,790	9,047,154	69,200	3,800			15,000					6,284,127	17,878.51
Westmoreland	16,530	395,420		3,680,900	67,750	5,830				24,000				2,433,600	4,989.80
Wyoming	10,320	8,750	297,400	3,413,821	19,800	1,140			110,000	103,600				9,578,161	21,548.72
York	2,680	10,325	240,000	4,196,400	22,000	1,140			113,000	6,000				3,984,500	15,661.00
Total	6,720	3,500	81,140	10,706,335	1,800	120,900								3,963,281	14,014.90
														4,477,945	6,670.68

The Following is a Report of Exchange of Eggs, Also Fish Distributed for Exhibition, Scientific and Fish Cultural Purposes, Year 1931

Name	Species of Fish or Eggs	Number	In Exchange for
State of Michigan	Eyed Brook Trout Eggs	200,000	Lake Trout Eggs
Ontario, Glenora	Eyed Brook Trout Eggs	1,000,000	Black Bass
U. S. Bureau of Fisheries	Eyed Brook Trout Eggs	200,000	White Fish Eggs
Exchange with Commercial Hatcheries	Eyed Brook Trout Eggs	570,000	Various Species
Exchange with Commercial Hatcheries	Catfish, Bass, Yellow Perch	1,400	Brook Trout Eggs
Exchange with Commercial Hatcheries	Eyed Brown Trout Eggs	75,000	Fingerling Trout
Exchange with Commercial Hatcheries	Minnows	70,000	Brook Trout
Schools & Aquariums	Pike Perch	195	Brook Trout
Schools & Aquariums	Albino Trout	560	Exhibition and Scientific Purposes
Schools & Aquariums	Brook Trout	701	Exhibition and Scientific Purposes
Schools & Aquariums	Minnows	18	Exhibition and Scientific Purposes
Schools & Aquariums	Yellow Perch	420	Exhibition and Scientific Purposes
Schools & Aquariums	Calico Bass	6	Exhibition and Scientific Purposes
Schools & Aquariums	Crawfish	50	Exhibition and Scientific Purposes
Individuals	Catfish	2,650	Exhibition and Scientific Purposes
Individuals	Minnows	16,100	Fish Cultural Purposes
Individuals	Yellow Perch	241,000	Fish Cultural Purposes

**COMMONWEALTH OF PENNSYLVANIA
BOARD OF FISH COMMISSIONERS
HARRISBURG, PA.**

STATEMENT OF THE DISTRIBUTION OF FISH—JANUARY 1 TO DECEMBER 31, 1932

Species	Size	Age	Number	Value (If Purchased)
Trout, Brook	0" to 12"	17 to 30 months	998,705	\$229,429.43
Trout, Brown	0" to 12"	11 to 30 months	100,036	26,258.20
Black Bass	1" to 7"	3 months to adult	205,030	61,823.00
Pike Perch	Fry	Fry	35,754,050	14,230.51
Yellow Perch	1" to 10"	Fry to adult	390,774,992	174,506.89
Sunfish	1" to 4"	4 months to adult	1,912,050	107,317.00
Catfish	2" to 10"	Fry	406,793	46,662.40
Blue Pike	Fry	Fry	158,770,000	39,692.50
Cisco	1" to 4"	Fry	2,500,000	375.00
Minnows	1" to 4"	5 months to adult	37,113.60	40,485.00
Frogs	1" to 4"	4 to 12 months	877,700	7,808.15
Pickrel	12" to 15"	Adult	4,280	4,280.00
Suckers	Fry to 13"	Fry to adult	15,098,770	1,090.00
Lake Trout	1" to 13"	4 months	54,500	
Total			608,383,466	\$791,170.68

(Distribution of Fish for Year 1932—Giving Value)

County	Brook Trout	Brown Trout	Pike Perch	Yellow Perch	Sunfish	Catfish	Black Bass	Cisco	Minnows	Frogs	Pickrel	Suckers	Lake Trout	Total for County Purchased	Value (If Purchased)
Adams	7,120		177,920	2,027,844	14,000	2,950	4,350		10,000	3,000		210,000		2,457,184	\$5,480.38
Allegheny			216,000	708,400	9,000	1,870	200			5,000		270,000		1,270,270	1,534.20
Armstrong	4,090			1,220,400	19,800	3,457	200		4,320	8,000				1,230,197	3,039.30
Beaver	1,040			2,486,000	9,000	2,800	1,200		4,800	2,000		265,000		3,132,400	2,832.90
Bedford	20,950	6,800	800,000	5,877,500	37,800	7,075	2,500		8,000	10,700				6,771,925	13,162.10
Berks	8,240	4,800		5,608,880	37,800	4,350	4,500		16,000	18,000				5,697,450	10,201.62
Blair	21,240	4,480		1,956,000	10,200	2,200	800		8,000	3,500		386,300		1,888,790	6,836.35
Bradford	4,440		96,000	3,645,600	84,800	12,550	1,200		7,400	6,000		293,400		4,024,822	10,429.14
Bucks	2,500		868,892	3,479,758	36,300	5,000			26,000	11,500		270,000		3,920,195	8,611.81
Butler	6,800		273,448	3,167,750	15,000	4,220	3,025		18,000	13,000				3,786,577	10,688.70
Cambria		2,500		3,688,800	34,100	8,737	700		64,000	17,000		187,690		1,716,063	7,996.99
Cameron	22,080			740,000	6,000	700	900					140,000		3,042,340	15,636.80
Carbon	13,968		66,275	1,381,800	27,500	7,200	1,000								
Centre	30,740	9,600	352,000	2,405,000	20,000	3,000									

Chester	10,320			5,946,648	41,000	7,120	2,850		28,800	16,800		21,000		6,028,938	10,869.32
Clarion	10,900			1,482,000	21,000	2,316	2,125		1,000	6,500				1,564,581	8,329.50
Crawford	39,620	2,240	304,000	5,082,000	29,600	3,000	1,000		34,000	19,000				5,445,610	14,737.50
Columbia	49,160	320	472,000	2,220,000	22,000	3,200	3,200		6,000	15,500		141,215		2,635,895	14,144.15
Cumberland	7,620	3,120	238,560	2,152,900	21,600	3,100	2,000		8,000	15,500		212,400		2,664,830	7,742.87
Dauphin	12,240	640	1,694,600	18,500,000	136,500	10,880	14,500		4,800	68,800		952,000		21,395,060	30,922.90
Delaware	22,070	7,200	698,012	2,693,380	31,000	4,950	9,600		8,000	16,000		264,600		3,754,812	14,374.47
Elk	9,560		107,940	5,478,408	20,000	4,700	2,800		2,000	9,000		75,600		5,710,008	7,593.47
Erie	26,320	2,560		1,357,896	14,300	1,700	1,650		1,000	4,000				1,380,746	2,688.94
Franklin	5,400			9,176,000	59,300	5,900	7,000		4,800	12,000				9,666.70	
Greene	19,460			1,582,000	18,000	1,375			9,600	6,500		1,340,000		11,198,000	15,567.70
Huntingdon	27,120			2,147,000	8,000	4,700	1,000		3,600	18,700				3,267,825	8,176.70
Indiana	27,285	240		3,616,000	26,700	7,500	2,000		10,000	3,000				3,815,280	8,192.55
Jefferson	14,380			1,536,000	9,000	3,625	200		8,000	9,500		100,000		1,810,025	3,676.25
Lebanon	9,600			2,034,000	20,400	5,375	3,800		12,000	20,500		480,000		2,432,275	4,118.50
Lancaster	23,880			4,995,000	38,100	9,125	6,000		8,000	9,000				6,756,645	14,161.23
Lawrence	4,840			5,152,800	20,400	6,025	1,700		48,000	5,000				5,209,195	7,670.10
Lehigh	1,280			3,362,600	11,200	1,200			9,000	6,000				3,422,680	9,167.75
Luzerne	7,920			2,317,788	18,500	4,450	1,200		25,000	6,000		88,505		3,194,886	5,283.52
Lycoming	3,660			5,140,400	28,500	11,550	41,400		48,000	5,000				5,298,415	8,150.36
McKean	10,720			12,158,768	51,000	7,450	2,000		41,000	4,000		2,712,800		16,080,613	31,349.43
Mercer	23,880			4,400,000	41,500	3,800	800		9,000	6,000		343,600		5,173,780	13,173.00
Mifflin	14,960			1,022,500	20,500	1,650			34,000	4,000				2,321,304	4,571.68
Monroe	26,744			2,988,044	13,000	1,300	4,280		34,000	4,000		442,505		3,330,359	18,498.75
Montgomery	32,600			3,148,000	27,600	1,300	4,900		60,000	35,400				3,634,480	17,278.90
Morris	3,280			3,885,000	38,000	8,300	1,000		3,000	40,000				3,997,020	16,693.70
Mt. Vernon	640			7,215,000	40,000	2,950	5,000		4,800	30,600		140,000		7,784,850	12,973.70
Nantuxet	12,100			1,674,900	11,100	3,075	1,850		62,000	5,000		270,000		2,688,025	8,122.50
Norfolk	29,364			3,800,400	21,000	1,100	1,500		22,000	9,800		336,300		4,455,269	10,529.59
Northampton	700			4,448,280	42,500	6,080	2,000		9,800	13,500				4,509,400	7,315.02
Northumberland	17,526			942,000	15,900				40,800			159,300		1,500,142	2,967.87
Perry	9,880			1,069,076	18,000	3,650	1,000		25,000	4,000		25,000		1,831,518	8,253.83
Philadelphia	432,113			1,925,400	30,000	2,500			2,000	9,000		265,500		2,661,513	3,801.50
Pike	352,694			2,598,732	17,000	1,650	3,000		8,000			326,600		3,826,926	6,634.44
Potter	21,820			281,144	30,000	5,100			32,000					292,894	2,275.47
Schuylkill	48,030	3,480		17,221,088	24,400	11,500	1,000		64,800	4,000		807,100		18,647,260	30,973.61
Snyder	16,480			740,000	4,000	920	1,000		30,000					865,560	19,932.18
Somerset	35,980			9,405,260	52,300	5,630			30,000			95,100		9,730,370	14,236.71
Sullivan	622,985			1,570,000	58,000	10,000	2,800		2,000			219,480		2,496,465	7,046.24
Tioga	216,000			1,808,000	15,300	3,400	1,000		11,200					2,080,690	9,317.45
Union	4,716			2,153,900	62,000	7,400			15,500					2,300,790	14,281.11
Warren	291,610			8,361,400	18,000	31,350	1,000		38,200	8,000		300,905		9,070,645	13,983.10
Washington	1,440			1,480,900	43,200	1,250	3,000		16,000					1,546,370	6,974.80
York	420,334			1,836,900	43,200	5,650			55,800			307,690		2,759,614	17,389.30
Zenango	324,000			2,405,000	22,000	1,750	9,500		2,400			84,000		2,892,950	13,076.40
Centre	960			3,330,000	44,200	3,400	4,000		18,400			644,000		4,824,680	15,521.40
Washington	3,280			3,141,400	19,100	3,975	5,000		21,500					3,578,975	5,724.20

(Distribution of Fish for Year 1932—Giving Value)—Continued

County	Brook Trout	Brown Trout	Pike	Yellow Perch	Sunfish	Catfish	Black Bass	Blue Pike	Cisco	Minnows	Frogs	Pick- ered	Suckers	Lake Trout	Total Value (If for County Purchased)
Wayne	18,742	4,120	212,080	8,381,400	52,500	44,980	2,000			37,000		1,323	100,300		8,800,345
Westmoreland	15,690	1,680		4,407,000	21,000	1,240				9,400	2,000				4,458,780
Wyoming	8,456		997,213	2,547,400	35,100	4,950	1,500				21,000		212,400		3,828,019
York	6,750		208,681	3,011,148	30,500	10,600	4,700			8,000	11,000		131,400		3,434,782
Total															608,383,466
															\$701,170.68

The Following is Report of Exchange of Eggs, Also Fish Distribution for Exhibition, Scientific and Fish Cultural Purposes, Year 1932

Name	Species of Fish or Eggs	Number	In Exchange for
Canada	Eyed Brook Trout Eggs	500,000	Brook Trout
State of Virginia	Eyed Brook Trout Eggs	300,000	Black Bass
State of Ohio	Brook Trout Fry	30,000	Adult Sunfish
State of Ohio	Brook Trout Fry	25	Adult Sunfish
Exchange with Commercial Hatcheries	Eyed Brook Trout Eggs	100,000	Eyed Lake Trout Eggs
Schools and Aquariums	Yellow Perch	300	Brook Trout
Schools and Aquariums	Sunfish	80	Exhibition and Scientific Purposes
Schools and Aquariums	Rough	162	Exhibition and Scientific Purposes
Schools and Aquariums	Goldfish	6	Exhibition and Scientific Purposes
Schools and Aquariums	312 Albino Trout	1,384	Exhibition and Scientific Purposes
Schools and Aquariums	Brook Trout	154	Exhibition and Scientific Purposes
Schools and Aquariums	50 Yellow Perch	7	Exhibition and Scientific Purposes
Schools and Aquariums	46 Pike Perch	2	Exhibition and Scientific Purposes
Individuals	Bowfin	31,750	Exhibition and Scientific Purposes
Individuals	Sunfish	8,800	Fish Cultural Purposes
Individuals	Catfish	1,500	Fish Cultural Purposes
Individuals	Minnows	9,000	Fish Cultural Purposes
Individuals	Frogs (Embryo)	2,635	Fish Cultural Purposes
Individuals	Yellow Perch		Fish Cultural Purposes

BOARD OF FISH COMMISSIONERS
Distribution of Fish in Pennsylvania by Species, Calendar Years 1919-1932

Kind of Fish	1919	1920	1921	1922	1923	1924	1925
Trout (All Species)	1,239,365	1,402,025	1,916,887	1,876,347	1,582,915	2,120,546	781,136
Bass (All Species)	54,620	32,485	1,546	389,025	64,675	634,310	888,985
Pike Perch	16,005,000	12,775,000	22,180,800	27,503,000	9,400,151	74,958,000	116,208,500
Yellow Perch	234,061,050	200,008,040	93,014,850	257,379,707	49,238,225	94,105,777	91,239,985
Sunfish	284,882	294,300	340,410	373,955	271,000	583,079	691,315
Catfish	206,380	97,050	143,945	104,888	145,568	118,550	112,353
Minnows	1,070,000		1,306,000	648,100	1,092,800	1,404,400	909,347
White Fish	42,400,000	40,000,000	47,972,000	92,760,800	57,976,000	36,018,000	
Frogs and Tadpoles	203,471,100	80,683,000	78,476,000	116,306,800	28,774,000	57,260,000	
Blue Pike	63,000	229,500	60,000	340,500	344,013	232,000	
Salmon	4,301,050		2,000,000	30,573,000	20,000,000	30,000,000	
Suckers			16,500	6,000		2,000	
Pickered					915		
Miscellaneous					5,952		
Total	503,225,333	355,572,000	247,441,538	528,288,980	168,955,912	287,497,168	871,133
							326,668,270

Kind of Fish	1926	1927	1928	1929	1930	1931	1932
Trout (All Species)	1,087,315	1,318,445	794,312	749,537	817,002	1,000,604	1,098,741
Bass (All Species)	699,840	532,900	595,750	255,905	336,427	387,474	205,030
Pike Perch	119,703,317	39,183,400	92,180,800	20,441,420	17,141,085	22,635,242	35,754,050
Yellow Perch	151,078,735	156,899,955	239,397,200	260,888,690	323,182,864	375,942,140	390,774,992
Sunfish	590,425	692,600	627,650	829,175	1,439,600	1,028,450	1,912,050
Catfish	290,935	65,055	125,175	118,883	899,340	608,375	406,793
Minnows	1,375,000	997,000	490,000	340,000	738,055	2,062,800	996,500
White Fish	4,225,400	1,500,000	14,755,000	5,160,000	4,000,000	1,500,000	
Frogs and Tadpoles	13,336,000	20,600,000	14,755,000	109,270,000	366,900	8,100,000	
Blue Pike		114,700	236,500	358,500	306,900	904,200	
Salmon	33,885,000	12,690,000	7,762,000	1,237,000	32,847,000	104,952,250	
Suckers							
Pickered							
Miscellaneous							
Total	326,736,567	294,644,455	356,973,362	399,655,690	391,998,893	521,038,457	608,383,466

COMPARATIVE STATEMENT BY YEARS SHOWING CATCH OF FISH IN LAKE ERIE PENNSYLVANIA WATERS 1923-1932, INC.

Species of Fish	1923		1924		1925		1926		1927	
	Pounds	Estimated value	Pounds	Estimated value	Pounds	Estimated value	Pounds	Estimated value	Pounds	Estimated value
Total	17,611,153	\$1,145,009.82	16,977,513	\$897,025.20	6,024,380	\$501,221.00	5,001,455	\$484,114.95	4,408,194	\$512,183.57
Cisco	14,340,200	968,608.83	13,469,438	695,509.58	1,000,933	83,217.86	1,126,321	122,237.36	1,624,737	198,048.23
Blue Pike	3,013,490	150,783.13	3,076,901	162,274.88	4,432,412	337,542.02	2,635,674	211,015.60	2,189,337	214,378.73
Yellow Perch	9,301	3,300.06	199,402	11,011.02	159,693	12,837.47	76,394	6,448.65	206,329	19,881.37
Pike Perch	9,184	1,296.97	18,401	2,021.70	14,619	2,101.69	10,200	1,444.59	19,175	2,675.61
White Fish	66,895	16,331.78	111,888	22,803.42	248,570	60,562.03	605,391	124,690.74	288,135	72,475.51
Lake Trout	144	11.52	290	28.08	15	2.25	48	8.64	52	6.50
Catfish	32,196	976.71	29,244	1,267.17	939	141.80	1,994	300.96	3,157	376.50
Carp	288	115.20	808	280.65	18,665	749.18	50,297	3,162.53	3,465	125.13
Sturgeon	200	2.00			711	281.95	1,776	710.40	1,109	443.60
Burbot	60	2.40							7,443	117.91
White Bass									4,843	347.44
Mullets									20,329	577.41
Grey Bass					8,101	215.32				
Miscellaneous	41,195	1,641.22	41,141	1,828.10	79,662	3,569.43	193,351	14,035.58	40,363	2,729.63

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Species of Fish	1928		1929		1930		1931		1932	
	Pounds	Estimated value	Pounds	Estimated value	Pounds	Estimated value	Pounds	Estimated value	Pounds	Estimated value
Total	1,357,820	\$253,424.00	1,342,673	\$163,334.96	3,643,134	\$317,160.71	5,008,147	\$314,364.51	2,521,161	\$169,015.67
Cisco	356,070	45,162.10	87,870	13,109.45	241,441	27,629.29	127,599	14,752.58	82,836	8,877.65
Blue Pike	627,283	69,715.71	714,162	58,879.98	2,372,367	163,876.15	3,680,999	164,873.27	1,611,675	69,870.91
Yellow Perch	447,140	28,603.24	177,271	8,539.87	78,641	5,013.22	480,214	21,087.83	331,278	13,768.34
Pike Perch	13,634	2,308.43	2,654	529.72	13,268	1,165.59	14,200	1,778.65	13,832	2,039.64
White Fish	402,108	101,011.55	316,939	80,703.34	859,857	175,181.16	633,479	108,407.36	447,378	73,298.54
Lake Trout	73	15.50			2,780	375.35	1,257	170.35	1,051	106.65
Catfish	5,914	787.24							3,972	279.42
Carp	7,989	495.16					11,496	1,109.76	6,871	166.08
Sturgeon	792	381.00	123	61.50	1,283	501.50		107.40	337	121.05
Burbot	4,194	65.18	16,045	274.40					*4,642	98.93
White Bass	29,653	1,482.65			29,832	1,191.60			2,522	87.98
Mullets	30,200	1,169.40	14,698	348.70	15,100	430.32			9,466	191.94
Grey Bass	33,229	1,993.74			10,496	419.84			3,680	54.14
Miscellaneous	131	13.10	13,511	868.00	23,970	1,374.69	58,545	2,077.31	1,421	54.40

* 42,000 Burbot given to charity.

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END OF YEAR